



THE BIRDS
OF SIBERIA

H. SEEBOHM

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THE BIRDS OF SIBERIA

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BIRDS OF SIBERIA

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A RECORD OF A NATURALIST'S VISITS
TO THE VALLEYS OF THE PETCHORA
AND YENESEI

BY
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WITH MAP AND ILLUSTRATIONS

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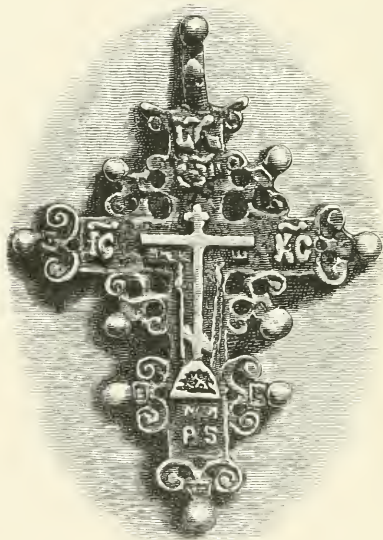
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× PREFACE

THE following pages contain the narrative of Mr. Seeböhm's two Siberian Expeditions—the first undertaken in 1875 in company with Mr. J. A. Harvie-Brown of Dunipace to the valley of the Petchora; the other, more lengthy and arduous, to the Yenesei river in 1877, when, though without any fellow-naturalist to share his labours, he had the advantage of the companionship of Captain Wiggins, the well-known Siberian navigator. Under the respective titles of "Siberia in Europe" and "Siberia in Asia," the results of these two journeys were published in 1880 and 1882.

Both works having passed out of print, it was arranged to combine them in one volume. Mr. Seeböhm set about the task, and had nearly finished it when his death occurred. With regard to the present completion of it, it is only necessary to say that, though the author has in various places made emendations of his former text, the nomenclature and the ornithology generally are here given as he left them. Certain passages which were unnecessary to a combined edition, or which had been superseded by

subsequent information, have been omitted. Limitation of space has also necessitated the omission of the lengthy footnotes, which chiefly referred to the geographical distribution of birds, but this omission, if not in its entirety, was at all events to a large extent contemplated by the author himself.



OLD RUSSIAN SILVER CROSS

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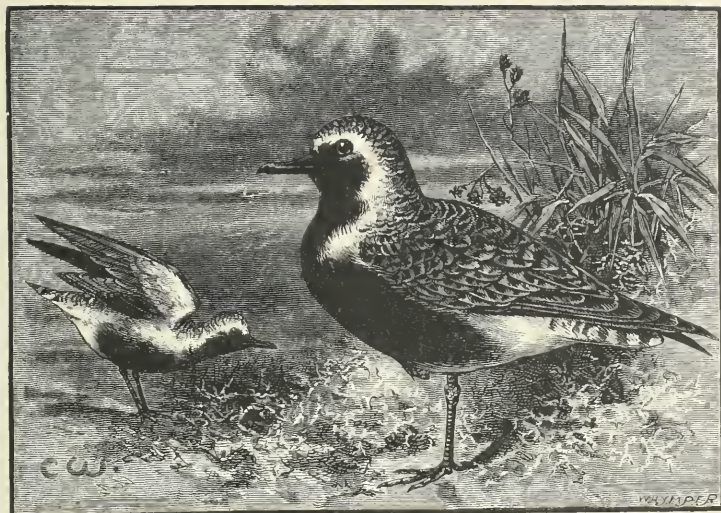
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PART I
TO THE PETCHORA VALLEY



GREY PLOVER

CHAPTER I.

EARLY EXPLORERS.

John Wolley—Unknown Breeding-Grounds—Birds of Archangel and Lapland—Voyages to the Petchora in the Seventeenth Century—Schrenck's Visit in 1837—Castrén's Visit in 1842—Keyserling's Visit in 1843—Pelzam's Visit in 1874—Hoffmansegg's Visit about 1850—Outfit—Letters of Introduction.

THE history of British birds has been enthusiastically studied by ornithologists during the last half-century. In spring and autumn several species of birds annually visit our shores in considerable numbers, passing us in their migrations to and from unknown breeding-grounds. These migrations, and the geographical distribution of birds, have of late years occupied a large share of the attention of ornithologists. The name of John Wolley stands pre-eminent amongst the discoverers in this department of science. His indefatigable labours in Lapland

are still fresh in the memory of the older generation of ornithologists, who will never cease to regret his untimely death. Notwithstanding his researches, there remained half a dozen well-known British birds whose breeding-grounds still continued wrapped in mystery, to solve which has been the ambition of many field naturalists during the past twenty years. These birds, to the discovery of whose eggs special interest seemed to attach, were the Grey Plover, the Little Stint, the Sanderling, the Curlew Sandpiper, the Knot,* and Bewick's Swan.

In 1872 my friend John A. Harvie-Brown accompanied E. R. Alston on an ornithological expedition to Archangel, the results of which were published in the "Ibis" for January 1873; and in 1874 I went with Robert Collett of Christiania to the north of Norway. Neither of these journeys added any very important fact to the stock of ornithological knowledge; but in each case they considerably increased our interest in Arctic ornithology, and gave us a knowledge of the notes and habits of many Arctic birds which was of invaluable assistance to us on our subsequent journeys. The difference between the birds found at Archangel and those at the north of Norway was so striking that we, as well as many of our ornithological friends, were convinced that another ten degrees east would bring us to the breeding-ground of many species new to North Europe; and there was also a chance that among these might be found some of the half-dozen birds which I have named, the discovery of whose breeding-haunts was the special object of our ambition.

* The Knot (*Tringa canutus*) was the only one of these six species of birds which we did not meet with in the valley of the Petchora. It probably breeds on the shores of the Polar Basin in both hemispheres, but its eggs were absolutely unknown until they were discovered on the west coast of Greenland a few years ago.

Harvie-Brown had been collecting information about the river Petchora for some time, and it was finally arranged that we should spend the summer of 1875 there together. We were under the impression that, ornithologically speaking, it was virgin ground, but in this we afterwards discovered that we were mistaken. So far as we were able to ascertain, no Englishman had travelled from Archangel to the Petchora for 250 years. In that curious old book called "Purchas his Pilgrimes," published in 1625, may be found the narratives of divers merchants and mariners who visited this river between the years 1611 and 1615 for the purpose of establishing a trade there in furs and skins, especially beaver, for which Ust-Zylma on the Petchora was at that time celebrated.

In 1837 Alexander Gustav Schrenck visited the Petchora under the auspices of the Imperial Botanical Gardens at St. Petersburg, and published voluminous information respecting the botany and the ethnology of this district.

In 1842 Castrén was sent out by the Swedish Government and collected much valuable information about the Samoyedes and the other races of North-East Russia. The following year, Paul von Krusenstern and Alexander Graf Keyserling visited the Petchora, and published an important work upon the geology and physical geography of the country, but none of these travellers seem to have written anything upon the subject of birds beyond a mere passing mention of ducks and geese. In St. Petersburg we learnt that Dr. Pelzam, from the Museum at Kazan, visited the Petchora in 1874, but he spent most of his time in dredging and paid little attention to birds. In Archangel we made a more important discovery. We there met the man who had been guide to Henke and Hoffmansegg about 1853. From him we learnt that

these naturalists had spent a year or more on the Petchora, had there collected birds and eggs, and had been very successful.

Our outfit was simple. We determined to be trammelled with as little luggage as possible. Besides the necessary changes of clothing we took each a pair of Cording's india-rubber boots, which we found invaluable. To protect our faces from the mosquitoes, we provided ourselves with silk gauze veils, with a couple of wire hoops inserted opposite the bridge of the nose and the chin, like little crinolines. These simple *komarniks* proved a complete success. On a hot summer's day life without them would have been simply unendurable. Of course the heat and sense of being somewhat stifled had to be borne, as by far the lesser of two evils. Our hands we protected by the regulation cavalry gauntlet. We took two tents with us, but had no occasion to use them. Our net hammocks served as beds by night and sofas by day, and very luxurious we found them. We each took a double-barrelled breechloader and a walking-stick gun. Five hundred cartridges for each weapon, with the necessary appliances for reloading, we found amply sufficient. The only mistake we made was in not taking baking powder, nor sufficient dried vegetables and Liebig's extract of meat.

In travelling in Russia, it is of the utmost importance to be on good terms with the officials, and we were most fortunate in obtaining the best introductions. Our warmest thanks are due to Count Schouvaloff for his kindness in giving us letters that ensured us a welcome such as we could not have expected. They added greatly to the safety and success of our trip.



SLEDGING THROUGH THE SNOW

CHAPTER II.

LONDON TO ARCHANGEL.

London to St. Petersburg—Mode of Heating Railway Carriages—Frozen Market at St. Petersburg—Bohemian Waxwings—Moscow to Vologda—M. Verakin—Sledging from Vologda to Archangel—The Yemshik—Post-houses—The Samovar—Angliski Russ—Modes of Harnessing Horses—State of the Roads—Weather—Traffic—Birds seen *en route*—Arrival at Archangel.

WE left London on the 3rd of March 1875. A journey of four days and three nights, including a comfortable night's rest at Cologne and a few hours each at Hanover and Berlin, landed us in St. Petersburg. In Belgium it was cold, but there was no snow. In Germany we saw skaters on the ice, and there were patches of snow in shady corners. As we proceeded eastward the snow and cold increased, and in Russia the whole ground was from one to two feet deep in snow, and sledges were the only

conveyances to be seen at the stations. As far as Cologne the railway carriages were heated by the ordinary hot-water foot-warmer, and very comfortable they were, with a temperature outside of about 40° . From Hanover to Berlin the carriages were heated with charcoal fires under the seats, and the sense of oppression from foul air was so intolerable, that we were only too glad to shiver with the windows open and the thermometer down to 20° . From Berlin to the frontier the carriages were heated by steam-pipes, with an arrangement for regulating the heat, and although the thermometer outside continued the same, we were able to keep a comfortable temperature of 60° without any sense of suffocation. In Russia the carriages were heated with wood fires, and we kept up about the same temperature without any sense of discomfort, although the thermometer had fallen to 5° outside. At Wirballen our letters of introduction saved us from an immensity of trouble and formality, thanks to the courtesy of M. de Pisanko and the other officials.

We spent four days at St. Petersburg, sight-seeing and completing the preparations for our journey. The morning after our arrival was the last day of the "butter fair," and we were very much amused and interested, especially with the ice-slide, which is one of its great features. A most interesting sight to us was the frozen market. Here, one stall was full of frozen pigs, there another was laden almost mountain high with frozen sides of oxen and deer. Part of the market was occupied by rows of stalls on which the frozen fish lay piled up in stacks. Another portion was devoted to birds and game, heaps of capercailzie, black grouse, hazel grouse (the *rabchik* of the Russians), willow grouse (the *koropatki* of the Russians), and others, with stacks of white hares, and baskets full of small birds. Amongst the latter we were

anxious to secure some Bohemian waxwings, in order, if possible, to throw some light upon the vexed question of the difference between the sexes. We bought a dozen of the most perfect skins for eighty kopecks. There were not many waxwings in the market, and all those we bought proved, on dissection, to be males. In winter these birds go in flocks, and it seems that the sexes flock separately, as is known to be the case with many other species.

On the evening of the 10th of March we left St. Petersburg, and travelled by rail all night to Moscow, where we spent a day. In the market we were told that waxwings were seen only in autumn. Jackdaws and hooded crows we found very abundant in Moscow. We left in the evening, and travelled by train all night and the whole of the next day, reaching Vologda at midnight.

We had previously written to the English Consul in Archangel, and he was kind enough to buy fur dresses for us and send them on to St. Petersburg. He also commissioned M. Verakin, a Russian merchant in Vologda, to furnish us with a sledge and provisions for the journey. M. Verakin treated us most hospitably, would not hear of our going to the hotel, and gave us every assistance in his power. Unfortunately, he spoke only his native Russ, but at last he found us an interpreter in the person of the German servant of a friend, and we were able through him to convey our thanks to our host for his kindness to us.

From 8 A.M. on Sunday morning, the 14th of March, to Thursday at noon, we travelled by sledge day and night from Vologda to Archangel, a distance of nearly 600 English miles. Our sledge was drawn by three horses, driven by a peasant called the *yemschik*. Both horses and drivers were changed at each station. There were thirty-six stages, varying in length from fifteen to

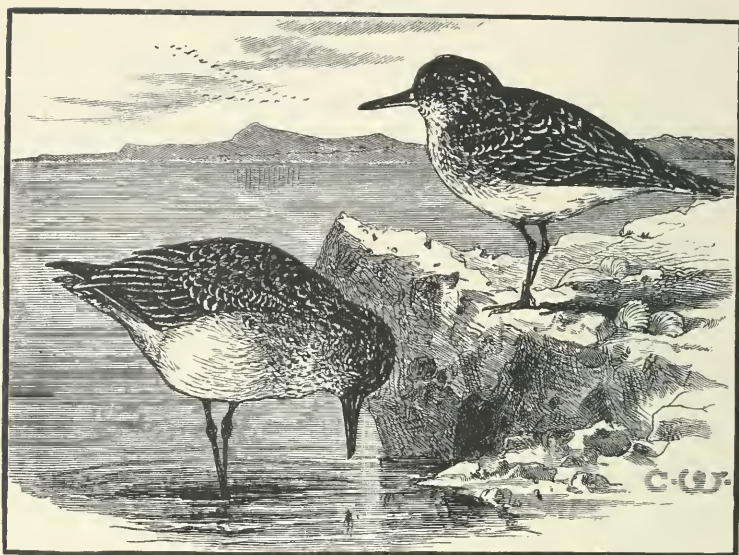
twenty-seven versts (ten to nineteen English miles). The horses were generally good, though small. They were tough, shaggy animals, apparently never groomed, but very hardy. We had but one lazy horse out of the 108 which we employed on the journey, but another broke down, and had to be left on the roadside to follow as best it could. That this treatment was not a solitary instance was proved by the fact that on one of the stages (the one of twenty-seven versts) we passed two horses which had evidently broken down and had been cast aside in the same way, lying dead and frozen on the road. The drivers were very civil and generally drove well, urging on the horses rather by the voice than the whip, often apparently imitating the bark of a wolf to frighten them, and at other times swearing at them in every variety of oath of which the Russian language is capable. The yemshiks were perfectly satisfied with a *pourboire* of one kopeck per verst. The horses were charged three kopecks per verst each. There was generally a comfortable room at the stations, and the station-masters usually came out to receive us. Sometimes we did not quit our sledge, but if we were hungry we carried our provision-basket into the station-house, ordered the "samovar," and made tea. The samovar is a great institution in Russia. Provisions are not to be had at the station-houses, but we always found a samovar, and we were generally able to procure milk. The samovar is a brass urn, with a charcoal fire in a tube in the centre, which boils water in a few minutes. We found that about a dozen words of Russ sufficed to pull us through very comfortably. Arrived at a station, we generally allowed the station-master to have the first say. As soon as a convenient opportunity occurred we interposed, "*Tre loshedi saychass*," which being interpreted

means "Three horses immediately." We then produced some rouble notes, and asked, "*Skolko*"—"How much?" The station-master would again begin to talk Russ. We offered the amount due as appeared from the list of stations which had been provided for us by M. Verakin at Vologda. This proving satisfactory, we proceeded to pay the yemschik his *pourboire*. The station-master once more began to talk volubly in Russ. We waited until he had done, and then asked innocently, "*Fameelye?*" The station-master nodded his head and said, "*Da, da*"—"Yes." We then said, "*Brown Seeböhm Angliski Vologda na Archangelsk.*" After the changes had been rung upon our names, it generally ended in our having to copy them upon a piece of paper for the station-master to write in his book; and the new yemschik having by this time got his team in order, we settled ourselves down again, cried "*Kharasho!*"—"All right!" and started off. With slight variations this course was repeated at each station. Our horses were harnessed in divers ways. Of course one was always in the shafts, but the other two were sometimes put one at each side of the shaft-horse; sometimes one on the near side, and the other in front; sometimes side by side in front of the shaft-horse; and sometimes all three were in single file. The roads in the Archangel province, where the snow-plough was used regularly, were generally very good. In the province of Vologda, where the snow-plough seemed to be unknown, the roads were at least twice as bad as the imagination of an Englishman can conceive. On the good roads the sensation of travelling was very pleasant, not unlike that in a railway carriage; on the bad roads our sensations were something like what Sancho Panza's must have been when he was tossed in the blanket. Our luggage was tightly packed with hay, and ourselves in

fur, else both would have suffered severely. At first we expected to be upset at each lurch, and took it for granted that our sledge would be battered to pieces long before the 600 miles to Archangel were completed, but by degrees we began to feel reassured. The outriggers of our sledge were so contrived that the seat might approach, but not quite reach, the perpendicular; and after we had broken a shaft once or twice, and seen the cool businesslike way in which our yemschik brought out his axe, cut down a birch-tree and fashioned a new shaft, we began to contemplate the possibility of the entire dissolution of the sledge with equanimity. The weather was very changeable; sometimes the thermometer was barely at freezing-point, sometimes we had a sort of November fog, and occasionally a snowstorm, but nearly half the time it was clear and cold with brilliant sunshine. The last night and day it was intensely cold, from 2° to 4° below zero. There was a considerable amount of traffic on the roads, and we frequently met long lines of sledges laden with hides, tar-barrels, frozen sides of beef, hay, flax, etc. Many peasants were sledging about from place to place, but we saw very few travellers with Government horses. The country was covered with about two feet of snow. It was rarely flat; at first a sort of open rolling prairie land with plenty of timber and well studded with villages, it afterwards became more hilly and almost entirely covered with forest. In many cases the road followed the course of a river, frequently crossing it and often continuing for some miles on its frozen surface. The track was then marked out with small fir-trees stuck into the snow at intervals. During the whole journey we met with only one person who could speak either English, French, or German. This was at Slavodka, where we bought some fancy bread

and Russian butter from a German baker, who came from Hesse Cassel. Jackdaws and hooded crows were the commonest birds in the open country, feeding for the most part upon the droppings of the horses on the roads. They were in splendid plumage and wonderfully clean. Many of the jackdaws had an almost white ring round the neck, and are doubtless the *Corvus collaris* of some authors, but, so far as we were able to see, this cannot be regarded as a good species. We frequently saw almost every intermediate variety in the same flock. During the first few days we noticed many colonies of nests in the plantations, but whether these would be tenanted by rooks later on in the season, or whether the hooded crow breeds in colonies in this country, we were not able to ascertain. We occasionally saw ravens and magpies, the latter becoming more common as we travelled farther north. In the open country we frequently came across small flocks of yellow-hammers on the roads, and now and then a pair of bullfinches. In driving through the forest we occasionally caught sight of a crossbill, pine grosbeak, marsh-tit, jay, or great spotted woodpecker. On one occasion we had an excellent opportunity of watching a small covey of willow-grouse, almost as pure white as the snow upon which they were running. In the villages sparrows were common enough. At Vologda, we are under the impression that they were all the house sparrow. In the villages through which we passed after the first day they were certainly all tree sparrows.

Upon our arrival at Archangel we were most hospitably entertained by the British Consul, Mr. Charles Birse. We were delighted once more to sit down to a good dinner, to enjoy the luxury of a Russian bath after our long journey, and to have a good night's rest in a comfortable bed.



LITTLE STINT

CHAPTER III.

ARCHANGEL.

The White City, Archangel—Decline of its Commerce—Cheapness of Living—Peter Kotzoff—Father Inokentia—The Samoyedes and their Sledges—Their Physical Characteristics—Samoyede Names of Birds—National Songs—Election of Samoyede Chiefs—Their Ignorance of Doctors or Medicinal Plants—Piottuch—Birds—The Weather—Hasty Departure from Archangel.

WE spent nineteen days in Archangel completing the preparations for our journey, and picking up what information we could respecting the great river Petchora, and the routes thither. Everybody looked upon our expedition as a most formidable undertaking, but all were anxious to give us every assistance in their power. There is an excellent German club in Archangel, and we dropped a few roubles in practising *krasnoye po bielemou*

and *bieloye po krasnomou** with billiard-balls large enough for Hercules to have played with. Archangel, the white city, must have been christened in winter. Most of the houses are painted white, the streets were white, the Dvina was white, and as far as the eye could reach the whole country was white. The principal street, the Troitski Prospekt, is a long straight road flanked with low houses, separated by gardens. All the houses are constructed of wood, except in the centre of the town, where many of them are of plastered bricks. The population is said to be from fifteen to seventeen thousand in winter, increasing in summer to about half as many more. Archangel seems to be declining in importance as a commercial centre, doubtless in consequence of its isolation from the railway system of Russia. The number of large firms does not increase, and there are now only three export houses of importance. The chances of commercial success are consequently small, and most of the young men who can afford it leave the city. The cost of living is small. House-rent is very cheap, and provisions equally so. For example, the best joints of beef can be bought in winter for 3*d.* per lb., in summer at 3 $\frac{3}{4}$ *d.* White bread costs 4 $\frac{1}{2}$ *d.* per lb., but brown bread can be had for $\frac{3}{4}$ *d.* Butter is 7 $\frac{1}{2}$ *d.* per lb. Milk (unskimmed) 1*d.* per quart, and cream 3 $\frac{3}{4}$ *d.* per pint. Game is ridiculously cheap, capercailzie being 7 $\frac{1}{2}$ *d.* each in autumn and 1*s.* 7*d.* each in winter; hazel grouse 4 $\frac{1}{2}$ *d.* per brace in autumn and 1*s.* 1 $\frac{1}{4}$ *d.* in winter; hares 3*d.* each, and salmon 9*d.* to 1*s.* 3*d.* per lb. In spite of the long and severe winters, the price of fuel is not a very important item. Wood sufficient to serve a small family for a year costs about 10*l.*

For some days we sat in commission, examining

* Red upon white, and white upon red.

witnesses on the Petchora, the British Consul kindly acting as interpreter for us. We got the best information from Peter Kotzoff, a Russian pilot, who showed us a chronometer which was presented to him by the British Government for assisting in the rescue of the crew of the *Elizabeth*, which was wrecked at the mouth of the Petchora. He was for some years a pilot on the great river, and acted as guide to Count Wilczec on his return journey overland from the Austrian-Hungarian Arctic Expedition. Another interesting acquaintance which we made was that of Father Inokentia, the present archpriest of Archangel, who lived seventeen years in the Petchora, principally east of Ishma. He was sent out by the Russian Government as a missionary amongst the Samoyedes, to convert them from their so-called idolatrous faith to the Greek Church. He told us that he remembered meeting with Schrenck, and that Castrén stopped some time at his house, at Kolva, on the river Ussa. He left the Petchora in 1847, so that his information was somewhat out of date. Father Inokentia seemed to be a jolly fat friar of the old school, and was very kind and patient in answering our numerous questions. How far he succeeded in his mission it is difficult to say. Most of the Samoyedes on the west side of the Ural now profess to belong to the Greek Church, but we were repeatedly informed that many of them still secretly retain their old beliefs, and continue to practise their ancient rites. We went through most of the Samoyede vocabulary given in Rae's "Land of the North Wind," and found it to be on the whole correct. No doubt, in districts so widely separated as the Kanin peninsula and the valley of the Ussa, considerable differences of dialect must be expected. But perhaps the most interesting information which we

obtained respecting this curious race of people was that which we got from the Samoyedes themselves. We had our first glimpse of them—it was little more than a glimpse—at St. Petersburg, where we found a single *choom* erected on the ice of the Neva. These were probably poor Samoyedes, owning only a few reindeer, and earning a scanty living during the long winter by selling various articles made from the skins and horns of these deer, and picking up a few kopecks by giving curious strangers a ride in their national sledges.

Near the villages round Archangel there were several Samoyede chooms. Two or more families were wintering about fifteen versts from Archangel, and came almost every day in their sledges to the town. On one of our shooting excursions we chartered a couple of these sledges to take us to an island on the Dvina, and thoroughly enjoyed this novel mode of travelling. The reindeer were very tractable, and we skimmed over the surface of the snow at a rapid pace. We had long conversations with several Samoyedes, the Consul, of course, acting as interpreter, and we invited them to the Consul's house, where they gave us freely all the information they could respecting themselves and the traditions of their race. They spoke Russian well and were by no means devoid of intelligence. They were all small men, with dark straight hair worn hanging over the forehead, thin moustache and beard, and little or no whiskers. Their features were irregular, with wide flat noses, high cheek-bones, and thick lips. The under jaw was coarse and heavy, the eyes brown, small, and oblique like those of the Chinese, and not unfrequently sore. They had small hands and feet, wide round heads, and sallow complexions. We took some of them to the museum, where they

recognised many of the stuffed birds, and tried to describe their habits and imitate their notes. They gave us the following Samoyede names of birds in the Petchora district :

Sandpiper	Suitar.
Willow Grouse	Hond-jy'.
Swan	Chouari.
Goose	Yebtaw.
Black Goose	Pardén Yebtaw.

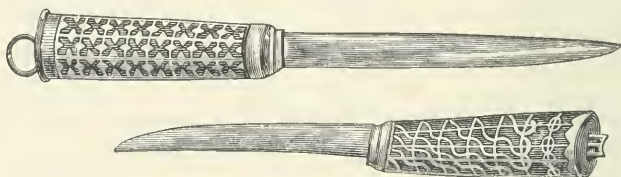
They told us there were two species of swans in the Petchora, the larger one common and breeding there, the smaller one rare, and appearing only in autumn. They represented the snowy owl as found on the tundra, but did not recognise the Lapp or Ural owls. We found later that these statements were substantially correct. On one occasion the Samoyedes favoured us with some of their national songs, monotonous chants which reminded me very much of the songs of the peasants of the Parnassus. One, which was translated for us, was a sort of Ossianic ditty, relating how the singer intended to make a journey with reindeer, how he would select the four fleetest bull reindeer from his herd, how he would always be at the head of the party, how he would get plenty of vodka, how he would barter his skins, and how he would take care not to be cheated in the transaction. One of the Samoyedes told us that they have a chief, residing in the Ural, who is answerable to the Emperor for the annual tribute, and that at his death his son succeeds him, unless he is thought not worthy to be made king. In this case another chief is elected by ballot, by putting pieces of wood into a *pimii*, or boot. It is right to note, however, that other Samoyedes whom we questioned had never heard of this Ural chief. The Samoyedes have no doctors, and use no medicinal plants, nor do they employ

any other medicines, unless the outward application of goose or swan fat for frost-bites may rank as such.

At Archangel we were fortunate enough to secure the services of M. Piottuch, a Polish exile, whom we engaged to go with us to the land of the Samoyedes in the double capacity of interpreter and bird-skinner. He spoke Russian and bad French, and since Alston and Harvie-Brown's visit to Archangel in 1872 had spent a considerable part of his leisure time in shooting and skinning birds. Accompanied by Piottuch we made several excursions on snow-shoes into the neighbouring woods, but saw remarkably few birds. Archangel contains a great number of sparrows; most of the farmyards abounded with them. Once or twice we identified a tree-sparrow, but by far the greater number were the common house-sparrow, many of the males being in splendid plumage. The next commonest bird was certainly the hooded crow. They were remarkably tame. In the market we sometimes saw half a dozen perched at the same time on the horses' backs, and we could almost kick them in the streets. They are the scavengers of Archangel. Pigeons were also common, now wild, but probably once domesticated. They look like rock-doves, a blue-grey, with darker head and shoulders, two black bars on the wing, and a white rump; but in some the latter characteristic is wanting. These pigeons are never molested, and are evidently held to be semi-sacred, like those in the Piazza di San Marco in Venice, or in the court of the Bayezidieh mosque in Stamboul. Jackdaws, ravens, and magpies were frequently seen. In the woods we found the mealy redpoll, the marsh-tit, an occasional bullfinch, a pair of lesser spotted woodpeckers, and a solitary hawfinch. Some white-winged crossbills and waxwings were brought alive into the town, but the peasant who had the wax-

wings asked eight roubles a pair, so, of course, we did not buy them. We were told that these birds were common near Archangel until towards the end of November, when they disappear as the weather becomes more severe.

During our stay in Archangel we had considerable changes in the weather. Soon after our arrival it was very cold, and on one or two occasions we noticed the thermometer as low as 27° below zero. If the weather was windy we felt the cold keenly, but at the lowest point there was not a breath of wind, and wrapped up in our furs we suffered from nothing but an attack of icicles on the moustache. Occasionally we had slight snow-storms, but brilliant sunshine was the rule, and we found the clear, dry air most invigorating. After April had set in the weather became more cloudy, and the thermometer once registered 37° in the shade. No signs of frost having been visible by the 6th, we made hot haste to be off before our winter road should break up, taking leave of our kind friends, Mr. and Mrs. Birse, with great regret. It has rarely been our lot to be received with such genuine hospitality as was shown us by this estimable gentleman and his wife.



SAMOYEDE KNIVES



UST-ZYLMA

CHAPTER IV.

SLEDGING TO UST-ZYLMA.

Bad Roads—Postal Service in Winter and Summer—Changeable Weather—Scenery—Pinega and Kuloi Rivers—Snow Plains—The Forests—Birds—Samoyedes—Mezén—A Polish Exile—Snow-Buntings—Jackdaws—We leave Mezén—Scenery—The Mezén River—The Pizhma—Bad State of the Roads—Piottuch's Accident—The Via Diabolica—Bolshanivagorskia—Break up of the Road—Polish Prejudices—The Villages—Curiosity of the Peasants—Greek Crosses—Love of Ornament—Employment and Amusements—Samoyedes—Siberian Jays—Umskia—First View of the Petchora—Arrival at Ust-Zylma.

THE journey from Archangel to Ust-Zylma on the Petchora is between 700 and 800 English miles. There are about forty stations, the distances between them being somewhat greater than those on our previous journey. Had we left Archangel a fortnight earlier, before the sun was powerful enough to soften the surface

of the snow, we might have accomplished the journey in much shorter time. As it was, we took three days and three nights to reach Mezén. We stopped one day and two nights in this, the frontier town of Siberia in Europe ; and the remainder of the journey occupied five days and four nights. A fortnight later the snow became impassable, the winter road was broken up, the horses at the stations in the uninhabited portions of the country, a distance of 250 versts, were sent home, and for two months the valley of the Petchora was as effectually cut off from all communication with civilised Europe as if it had been in the moon. The last 150 miles had become a series of uninhabited, impassable swamps, across which no letter, nor messenger, nor telegram, ever came. The postal service was suspended until the floods in the river caused by the sudden melting of the snow had sufficiently subsided to make it possible to row against stream. The summer route from Mezén to Ust-Zylma is up the Mezén River to its junction with the Peza, up that river to its source, across the watershed, a portorage of sixteen versts, by horses, to the source of the Zylma, and then down that river to the Petchora.

We left Archangel on a Tuesday evening, in two sledges or *pavoskas*; Harvie-Brown and I, with part of the luggage in one, drawn by three horses, and Piottuch with the remainder of the luggage in the other, drawn by two horses. That night and the whole of the following day were warm, the thermometer standing at 44° in the shade. In the sun it once went up to 70°. The wind was south-west, and in our inexperience we began to fear that summer would be upon us before we reached the Petchora. Our progress was slow, and at this time, including stoppages, we did not average much more than seven miles an hour. On Wednesday night we had a

smart frost, and began to congratulate each other on the chance of our progress being more rapid. But we soon found that we were out of the frying-pan into the fire. The great traffic to and from the fair at Pinega had worn a deep rut for the horses' feet in the track, and one runner of our sledge would persist in running in it, which threw the sledge so much out of the level that the outrigger or projecting spar, which is necessary to prevent the sledge from being upset every five minutes, was continually ploughing into the snow which formed a bank on each side of the road. As long as the snow was soft it was of little consequence, but when the crust was hardened by an hour or two of frost, the outrigger of the sledge went "scrunch" into it with a sound almost like that of a man turning wood in a lathe, and our progress was as much impeded by this unwelcome break as it had been by the giving way of the snow under the horses' feet. On Thursday afternoon the sun was again hot, but fortunately it froze again at night. Friday was dull all day, with a slight thaw, and we reached Mezén at 4 P.M. and found the roofs dripping.

The scenery on the route was much more varied than we had expected to find it. Most of the way we sledged through the forests, a wide space being cleared on each side of the track ; but sometimes the trees came close up to the road, which was hilly and winding, and we seemed to be lost in a dense wood. Perhaps the most picturesque scenery of the journey was that we saw in ascending the Pinega River and descending the Kuloi, and we repeatedly enjoyed it for some versts at a time. The Pinega River is very broad, with what looked like cliffs of oolite on each side, surmounted by pine forests. The Kuloi River is narrower, and there are no cliffs of any importance, the trees coming down to the edge of the ice. When we passed the Kuloi near its source, soon after leaving

Pinega, the river was flowing through a strip of open country. In several places it was free from ice, and on two occasions we saw ducks swimming upon the open water. About thirty versts before reaching Mezén we crossed an immense plain of snow, as flat as a lake, extending east and west as far as the eye could reach. In almost every instance the flat plains were destitute of trees, being no doubt swamps or marshes, too wet for timber to grow in, whilst the hills were invariably covered with forests. We found that the roads were always deep in the forests. Our horses had firm footing, but the outriggers of the sledge "scrunched" unpleasantly. In the open plains the sides of the road were low, any deep tracks which might have been made being no doubt soon filled up again by the drifting snow, and we got on at a rapid pace so long as the snow did not give way under the horses' feet. The forests were principally spruce fir, and very spruce these fir-trees looked, as if they had just been combed and brushed, in striking contrast to the haggard larches, whose leafless branches were clothed with black and grey lichen like a suit of rags, and were torn and twisted by the winds into wild fantastic shapes, reminding one of a sketch by Gustave Doré. In many places birches and Scotch fir were common, and occasionally we saw a few willows. There were very few birds. The hooded crow was the commonest, principally close to the villages. Now and then we saw a jackdaw or a raven, or a pair of magpies. As we proceeded farther east, sparrows became less plentiful, but we noticed both species, the house and the tree sparrow. Soon after leaving Archangel we met with a flock of snow-buntings, and they gradually became more frequent as we neared Mezén, especially on the rivers. They seemed to be slowly migrating northwards, following the course of the

rivers, where there was always a chance of their finding some open water. Not far from Pinega we got out of the sledge to chase a pair of great spotted woodpeckers, and succeeded in shooting the female. We also saw a pair of Siberian jays, but, not being provided with snow-shoes, we found it was no use attempting to follow the birds into the forests through the deep snow. Soon after leaving Pinega we saw a bird sitting on a cliff, and after a short chase shot it, and found it to be a common crossbill, a bird which, curiously enough, we did not meet with afterwards. A stage or two before reaching Mezén we saw a second pair of Siberian jays, and surprised a fine male capercaillie not far from the road.

At Pinega we found a party of Samoyedes from Kanin, with about twenty sledges, and we passed a larger party about halfway to Mezén. We met with no difficulties. Once or twice, on our arrival at a station during the night, we were told that there were no horses to be had, that they were all out; but on the presentation of the "Crown Padarozhnayas," with which General Timarsheff (the Minister of the Interior at St. Petersburg) had kindly provided us, horses were forthcoming at once. We paid for five horses on one occasion when we had only four, and at Pinega the station-master tried to make us take six, but our obstinate refusal to do so, lest it should become a precedent in future, prevailed.

We reached Mezén on the 10th of April, and spent an interesting day in this frontier town. The Ispravnik, to whom we had letters from the Governor of Archangel, called upon us and invited us to take tea at his house. He spoke a smattering of French, but had asked a Polish exile of the name of Bronza to meet us as interpreter. M. Bronza spoke German, and we endeavoured to get some information from him about the Samoyedes; but he

was so full of his own grievances, and so utterly without interest in Russia and everything Russian, that we soon gave it up in despair. Poland is evidently the Ireland of Russia. Both the Irish and the Poles seem crazy on the subject of home-rule, and in many other points show a similarity of temperament. They are both hot-blooded races, endowed with a wonderful sense of humour, and an intolerable tolerance of dirt, disorder, and bad management generally.

At Mezén we were much interested in watching a large flock of snow-buntings. Their favourite resort was the steep bank of the river, where they found abundance of food in the manure which was thrown away. In a country where there is plenty of grass in summer and very little corn is cultivated and where the cattle have to be stall-fed for seven or eight months out of the twelve, manure apparently is of little value, and hundreds of cart-loads are annually deposited on the steep banks of the river, where it is washed away by the floods caused by the sudden melting of the snow in May. The snow-buntings were also frequently seen round the hole in the ice on the river, where the inhabitants of Mezén obtained their supply of water. In both places the boys of the village had set white horsehair snares, and seemed to be very successful in their sport. At this time of the year these birds are fat and are excellent eating. We were told that in a fortnight they would be here in much greater numbers, and would be sold for a rouble the hundred, or even less. None of the birds we got were in full summer plumage, yet they looked extremely handsome as they ran along the snow like a wagtail or a dotterel, or fluttered from place to place with a butterfly-like kind of flight. We occasionally saw them hop, but they generally preferred to run. The most interesting

fact which we observed was that the snow-bunting occasionally perches in trees. We saw two in the forest, one of which perched in a spruce fir.

We found jackdaws very numerous at Mezén, but Piottuch told us that it is only during the last four or five years that the bird has been seen in this neighbourhood. He said that it is now a resident there. Piottuch in the days of his exile lived some years at Mezén, and had a considerable circle of acquaintance in the town, who made merry on the occasion of his revisiting them.

We left Mezén on Sunday morning at nine, glad to get away, as Piottuch's old friends were too many for him, and far too hospitable, and he was drinking more champagne than we thought prudent. During the previous four-and-twenty hours we had had violent wind and snowstorms, but the morning had cleared up, the sun shone brilliantly, and it was not cold. But at night snow came on again and continued till Wednesday evening, when the weather suddenly cleared up again, the thermometer falling from freezing-point to zero. During the three days, about four inches of snow had been added to the couple of feet already on the ground. Travelling during even a slight snowstorm is by no means so pleasant as when the sun shines on a mild day; but travelling in a sledge with the thermometer at zero is decidedly unpleasant, even with brilliant sunshine and no wind. If you expose your face to the air your nose is in danger, then the icicles that form continually upon your moustache are anything but comfortable, and the condensation of your breath upon your neck-wrappings is always irritating; while, if you subside altogether into your furs, the sense of semi-suffocation is almost as bad. On the whole, however, we did not suffer so much from the cold as we expected.

The scenery on this journey was more varied than any we had previously met with. We alternated between forest, river, and open plain. The Mezén is a fine river, half a mile or more wide, with steep banks of what looked like red chalk about 100 feet high, clothed with forest to the edge, which is continually crumbling away and letting the pine-trees slip into the water. At intervals, and often with remarkable regularity, the cliffs were cut away down to the water's edge, probably by small temporary rivulets born of the melting snow. The Pizhma is a much smaller river, not half the size of the Mezén, and without rocky cliffs on the banks. There are two Pizhmas, on both of which we travelled. Both rise in the lake of Jam, the Petchorski Pizhma flowing north-east into the Zylma just before that river enters the Petchora, and the Mezénski Pizhma flowing south-west into the Mezén. On the rivers the roads were always good, except in one part of the Mezénski Pizhma where the river is very narrow and the current very strong. In one place we almost shuddered to see open water rushing along within nine feet of the sledge. Not long afterwards we stuck fast, and had to get out of the sledge on the snow in the middle of the river. It was nearly midnight and very cloudy. Piottuch with his lighter sledge had got safely over the dangerous part and stood grinning at us, as the yemshiks hacked the frozen snow off the runners of our sledge with their axes, and having added his two horses to our team, placed two little fir-trees across the path and flogged the horses until they dragged the machine through the snow and water on to firm ground. We had our revenge, however, shortly afterwards. A few stations farther on Piottuch's sledge came to grief, one of the runners breaking completely in two in the front. He was some distance in

advance of our sledge, and when we overtook him at the station he came to us with a very long face to tell us of the "*très mal chose*." We soon set him upon his legs again. We bought a peasant's sledge for a rouble and a half, took off the sides, and removing the runners from the broken sledge lashed the two together with a strong cord. Piottuch started in high glee again, assuring us that his sledge was "*beaucoup plus bon*" than ours. The effect of the alteration however was, to raise the level of his outriggers a few inches, which made all the difference between safety and danger. He was soon fast asleep as usual, for he had not yet quite slept off his Mezén champagne, when his sledge gave a greater lurch than it was wont to do and capsized, waking him with a shower of portmanteaus about his ears; and he was dragged out of the deep snow by the yemschik amidst roars of laughter on our part.

As before, we found the roads in the open plain always good. These plains were a dead flat, with a tree or two here and there. The rut worn by the horses' feet was not deep, and the path was almost level with the side. We glided along smoothly and luxuriously. The roads in the forest were bad beyond all conception. The banks were high, and were always in the way of the outriggers, which "scrunched" against them with a most irritating sound. Both laterally and vertically they were as winding as a snake. Sometimes our sledge was on the top of a steep hill, our first horse in the valley, and our third horse on the top of the next hill. The motion was like that of a boat in a chopping sea, and the sledge banged about from pillar to post to such an extent that we scarcely felt the want of exercise. The Russian forest-road is not a *via mala*, it is a *via diabolica*.

At Bolshanivagorskia, upon entering the station-house,

we found the room occupied by a party, and the samovar in full operation. Fancying that some of the party looked English, I inquired if any of them spoke German, and the least Russian-looking gentleman among them replied that he did. I informed him that we were Englishmen, travelling from London to the Petchora, and I added that we were glad to find some one on the route with whom we could converse. I then asked him if he and his party were also travelling. He replied that they were stationed there for some time. I then asked if his name was Rosenthal. He said it was, and a hearty laugh followed at the success of my guess. We enjoyed his astonishment for some time, and then explained that we had been told by the Ispravnik at Mezén that there was only one man in the district who could speak German, the forest engineer, Herr Rosenthal. We spent an hour pleasantly together. Like every one we met who had not been to the Petchora, he exaggerated the dangers and difficulties of the journey. He was engaged in measuring the timber felled on Rusanoff's concession on behalf of the Russian Government, who receive so much per tree according to the quantity of available wood in it.

On the other hand, it is possible that we may have under-estimated the dangers and difficulties of our journey, seeing we had the good luck to pull through them so well. The roads were certainly giving way, and it may have been a happy accident in our favour that the weather changed again when it did. On one occasion the crust of snow not being firm enough to support the horses, they all three suddenly sank up to their bellies. Of course they were utterly helpless. We feared for a moment that our journey had suddenly come to an end and that we had hopelessly stuck fast. We alighted from the sledge, which had not sunk in the snow. The

two yemschiks set to work in good earnest, and we doffed our malitzas and followed suit. The horses were unharnessed, and we soon succeeded in making them struggle out on to firm ground. We had no difficulty in pushing the sledge after them, and were soon ready to start again. All this time Piottuch stood calmly by, never offering for a moment to render us the smallest assistance. The Russians we always found equal to any emergency, and ready to lend a helping hand on such occasions as an Englishman would. The Poles, on the contrary, seem to be a helpless, shiftless race of people, with a contemptible prejudice against manual labour. A similar accident did not happen again. We had many a stumble, but no irretrievable fall. Our horses were sure-footed and wonderfully plucky, and we seldom had a really bad animal. We started with five horses for the two sledges, which we reduced to four the latter half of the journey, and on one or more occasions we accomplished a stage satisfactorily with only three.

The country is very thinly populated. After leaving Mezén the villages were small, and during the last 150 miles there were no villages at all, only a single station-house, where a change of horses could be obtained, and which would shortly be deserted altogether for the summer months. As we were the first Englishmen who had travelled on this road during the lifetime of any of the villagers, our appearance naturally excited great curiosity, and when we stopped at a station in the village to change horses, a crowd quickly gathered round the sledges. We found the peasants very inquisitive, asking the English names of various articles. They were extremely good-natured, enjoyed a broad joke, laughed heartily at our pigeon-Russ, and were, so far as we could judge, perfectly honest. We left our sledges with all our luggage, wraps,

and things unprotected, sometimes for an hour, at the stations where we stopped for a meal, and on no occasion had anything been stolen. In the villages on this part of the journey we noticed a number of crosses, generally one or two at the entrance, and one near the centre of the village. They were made of wood, and were about ten feet high, the ordinary Greek double cross, with an oblique foot-bar, and most of them were protected by a wooden roof to keep off the snow. Both the roof and the cross itself were, as a rule, elaborately carved, and the whole face of the cross was covered with inscriptions (no doubt Slavonic) in about three-inch letters. Sometimes in the poorer villages the crosses were not carved, and the inscription and ornamentation were simply painted upon the wood, generally in various colours. The Russian peasantry in European Siberia seem to be fond of ornament. The majority of the houses are built with the gable end to the street, and in the centre of the gable is a window, opening on to a balcony. This balcony, the framework of the windows, the ends of the rain-gutters, and the ends of the ridge of the roof, were often elaborately carved and fretted, and sometimes painted in gay colours. In nearly all the villages we noticed a conspicuous arrangement of railings for the drying of flax, hay, or corn. In the station-houses we found the men, and sometimes the women, engaged in spinning flax, making nets, or weaving coarse linen. In the stations, however, where there was no village, a draught-board of very rude construction evidently served to while away the long winter evenings. Several times during the journey we saw Samoyedes, or Syriani, sledging along with their reindeer, and in many places the snow was ploughed up some distance from the road, showing that the reindeer had been seeking for food. As we neared Ust-Zylma we

passed several of the chooms, or reindeer-skin tents, of these curious people by the roadside. During the greater part of the journey few birds were to be seen. In the villages magpies were the commonest birds, and occasionally we saw a few pigeons, hooded crows, and tree-sparrows. On the banks of the river flocks of snow-buntings were common. In the forests we saw a few capercaillie.

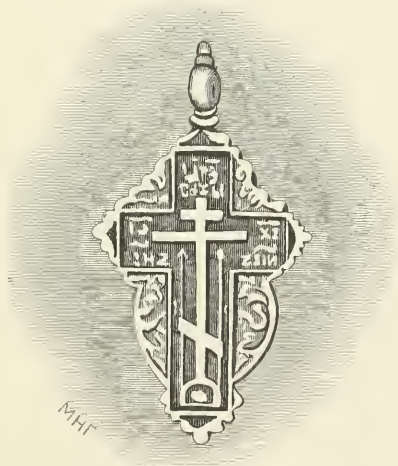
At Umskia, where we were fortunately detained six hours for want of horses, there was an abundant supply of birds. This station is a solitary house on the banks of the Petchorski Pizhma, about fifty-four versts from Ust-Zylma. The great attraction for birds in this place was doubtless the hole in the ice of the river, which had to be kept open to supply the station with water, and the dung which the horses dropped during the few hours they fed and rested outside the station. We shot five Siberian jays (*Perisoreus infaustus*), and had some opportunity of watching their habits. They were not at all shy, and were fond of perching upon or clinging to the trunks of the pines, and sometimes we saw them run up the stems like a woodpecker. Their song was by no means unmusical, a low warble like that of the starling, but not so harsh. These birds are early breeders, and the song is probably discontinued soon after incubation has begun, as we did not hear it afterwards, though we frequently came across the birds. Out of the five birds which we shot only one proved to be a female, with the ovary very small. There were a few snow-buntings always to be seen, but we did not think it worth while wasting powder and shot upon them, as we had selected a score of handsome birds out of a lot brought to one of the stations by a peasant who had snared them. We could have bought almost any quantity alive or dead at ten kopecks the

score. I shot one by accident as it was feeding under a larch-tree in company with a Siberian jay, a couple of bullfinches, half a dozen other snow-buntings, and a few redpolls. Harvie-Brown shot another as it sat perched upon the branch of a larch, in order to be able to produce the skin of a bird shot perching, as the fact that they do ever perch in trees has been disputed. We had abundant opportunity of seeing these birds in trees. We saw as many as three or four in one tree at the same time, and frequently observed them fly from one tree to another. We saw plenty of the Northern bullfinches (*Pyrrhula rubicilla*, Pallas) and shot five males in brilliant plumage. They were all in pairs. We fancied that the call-note of these bullfinches differed from that of our bird. Speaking from memory, it seemed to us to be louder and harsher, by no means so plaintive, and not badly represented by the word "kak."

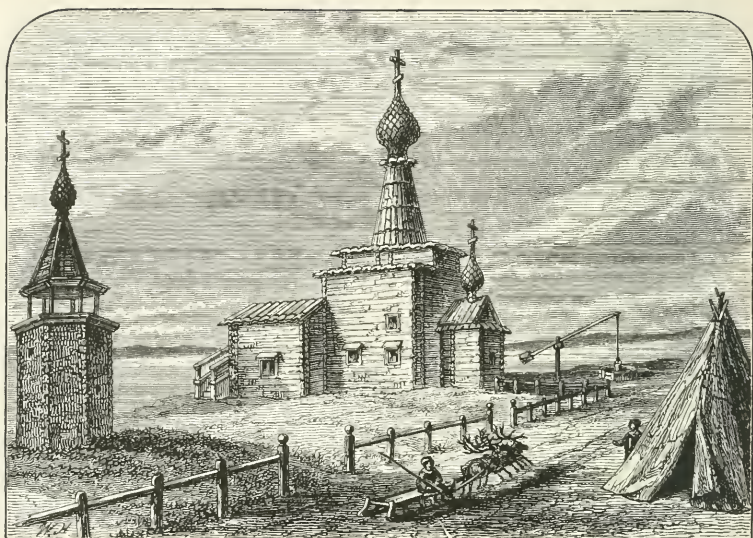
After leaving Umskia we looked anxiously out for the first glimpses of the distant Petchora, and it was not long before we crossed a low range of hills, from the ridge of which we had a view of the mighty river. As we sledged down the Zylma, and finally reached its junction with the Petchora, the vastness of this river impressed us beyond all our expectations. We were 300 miles from its mouth, and to our left the huge flood stretched away in a broad white stream as far as the eye could reach, and fifteen times as wide as the Thames at Hammersmith Bridge. On the opposite bank, a mile and a half off, we could discern the churches and houses of Ust-Zylma, round which the river swept to our right. Piottuch had arrived at the town some hours before us, and we found comfortable apartments in the house of a Russian peasant of the name of Boulegan, where we were visited by M. Znaminski, the Preestáff of Ust-Zylma, and drank a toast (the success

of our visit to the Petchora) in a bottle of excellent Crimean champagne.

The total course of this great river covers nearly 1000 miles. It rises in the Urals, north of the government of Perm, not far from the important town of Tcherdin, which lies upon the watershed of the Petchora and the Kama. It drains nearly the whole of the north-western slope of the Ural Mountains, and flows almost due north till its junction with the Ussa; here the river is a mile wide, and the Ussa is the larger stream of the two. The Petchora at this point makes a bend west; but after receiving the waters of the Zylina, it resumes its northward course, which it continues till it falls into the Arctic Ocean by a number of mouths opposite the islands of Novaya Zemlya.



OLD RUSSIAN SILVER CROSS



ANCIENT CHURCH OF THE OLD BELIEVERS

CHAPTER V.

UST-ZYLMA.

· Ust-Zylma—Its Streets and Houses—Its Manure—Population of the Town—Its Churches—Our Quarters—The Banks of the River—The Old Believers—Their Superstition—Silver Crosses—Hospitality of the Officials—Shooting-parties—Captain Arendt and Captain Engel—Snowshoes—Scarcity of Birds—The Snow-bunting—Redpolls—Winter.

UST-ZYLMA* is a long, straggling village, lying on the narrow strip of flat land on the north and east bank of the Petchora, where that river makes a sudden bend from west to north, about 300 miles from its mouth. Each homestead is a farmhouse with outbuildings.

* In "Purchas his Pilgrimes," the narrative of the voyage of Josias Logan, who wintered in the valley of the Petchora in 1611, contains the following description of this town: "Ust-Zylma is a village of some thirtie or fortie houses, and standeth in the height of 66° and 30 minutes. They have corne growing there, both barley and rye, and their barley is passing faire and white almost as rice."

including almost always a bath-house. They are irregularly scattered over the ground, sometimes at considerable distances apart, and sometimes in clusters. There is a principal road which one might by courtesy call the main street, which meanders through the village for perhaps two miles, with numerous side branches ; but the general appearance of the place is as if the houses had been strewn about at random, and each peasant had been left to make a road to his nearest neighbour as best he could. Towards the centre of the village there is here and there a wooden causeway, like those in Archangel. We found this wooden *trottoir* all but indispensable when the thaw set in. When we reached Ust-Zylma the streets were covered with a thick layer of frozen manure. The yards round the houses were in a still worse condition, and when the sun was hot it was difficult to walk dryshod in consequence of the pools of liquid manure, which filled every depression in the ground, and no doubt very frequently soaked into the wells. This manure makes Ust-Zylma one vast dung-hill, and would probably produce much disease, were it not for the fact that it is frozen for nearly seven months out of the twelve, and is in most years carried away soon after it thaws by the floods of the Petchora, which generally overflows its banks when the snow melts all at once with the sudden arrival of summer. It not unfrequently happens at this season of the year that half the village is under water, and the peasants have to boat from house to house. All the houses are built with this contingency in view. The bottom story is generally low, and consists of a suite of lumber-rooms, where the cattle are often housed in winter. The dwelling-rooms are on the second story, generally reached by a covered flight of stairs outside the house, leading from a porch below

to a gallery, which is carried round the house. Upon this porch, staircase, and gallery a good deal of skill in wood-carving is often expended. The winter is long, and the length of time during which the cattle are stalled so great, and the amount of land available for cultivation so small, that there is always a large surplus of manure, which, as I have already stated, the peasants do not think worth the cost of preservation. The cattle are fed principally upon hay, which is cut upon the low lands on the other side of the Petchora. These lands are flooded every spring, and any manure placed upon them would speedily be washed off: nor is it needed, as the river itself is the great fertiliser in these low-lying districts, exactly as the Nile is in Egypt. Of course, to accumulate so much manure in the streets, the traffic must be large. Long strings of sledges were often to be seen drawing hay, pine logs for buildings, and smaller timber for firewood. In the summer nearly every peasant turns fisherman, and catches salmon and other fish in the Petchora with a seine net. Neither farming nor fishing seems to be very profitable. It is very easy to get a living, but there is no market for surplus produce. Beef fetches only $1\frac{1}{2}$ d. per lb. retail. Most articles that are worth the cartage, such as furs, feathers, down, frozen meat, tar, and so forth, go to Pinega fair, and some are even sent as far as Nishni Novgorod; but the cost of transit absorbs the profit. Now and then you meet with a merchant who has accumulated a handsome fortune; but the peasants are on the whole poor, and will doubtless remain so until railway communication with Moscow is opened, or steamers run regularly from the mouth of the Petchora, both of which projects seem at present to be hopelessly improbable. The population of Ust-Zylma probably does not exceed 1500 or 2000, increased in

winter by Samoyedes, who erect their chooms in the neighbouring forest. When we reached Ust-Zylma, and for a week or more afterwards, a great migration of these curious people was going on, and we often saw a score or more of their sledges in a day, and sometimes there were as many reindeer as horses to be seen in the streets.

The flat country on the banks of the Petchora, upon which the village is built, does not extend more than a few hundred yards. The land then rapidly rises, and these slopes are cultivated for some way up the hillside. We found the peasants busily employed in carting manure in sledges and spreading it on the snow. The monotony of the long village is broken by three churches, one a very ancient and picturesque structure, in some places rather artistically ornamented. This was formerly the church of the Old Believers, but it is now too rotten for use, and a more modern-looking building has been erected. The third church is that of the Orthodox Greek Church. All the houses in Ust-Zylma are of course built of wood, solid balks of timber with moss and tar in the joints, and notched into each other at the corner, and they are more or less carved and ornamented in various places. Sometimes the slopes of the hills are relieved by a large tree which has been left standing, and here and there is an old windmill. Beyond the cultivated ground is the forest, clothing the hilly country stretching away north, the trees gradually dwindling in size as far as the Arctic Circle, beyond which lies the mysterious tundra.

Our quarters in Ust-Zylma were two excellent rooms on the second floor of the best house in the village, for which we paid two roubles a month. No doubt we could have had them for half the money if we had taken them for six months. The house was built by M. Sideroff, the founder of the Petchora Timber-trading Company, and

was afterwards sold to M. Boulegan. Our windows looked out across the street on to the Petchora, which we calculated from two rough trigonometrical observations to be a mile and a half wide. At Ust-Ussa, 200 miles higher up, its width is said to be nearly a mile. A little beyond the limits of the village at each end, the flat land on the bank of the river ceases, and the forest comes up to the edge of a cliff of sand, earth, and pebbles, varying from 50 to 100 feet high. This bank drops nearly perpendicularly on to the mud and pebbles on the edge of the river. In some places the pebbly strand was bare of snow, and we noticed pieces of granite, ironstone, and limestone. Some of the latter was full of fossil shells, and we found many pieces that looked like madrepore and fossil coral. Soon after the high steep bank of the river begins, the grand sweep which the Petchora makes round the village ends, and the river stretches away north-east for miles. The view from the top of the bank looking up the wide white river is very fine. The high banks, too steep in most places for the snow to rest upon, and the dark pines on the top, form a striking contrast to the pure white snow on the ice below, down which for many versts may be seen the long winding line of diminutive fir-trees, marking the road, upon which the sledges of the travelling peasants look like black spots in the distance. It would, perhaps, be a very difficult subject to make a fine picture of, the effect on the eye being one of simple vastness, causing one continually to exclaim, "What a great river! What a big country!"

Most of the peasants of Ust-Zylma and the villages near are Old Believers, people who retain a very curious form of Christian superstition, closely allied to the Greek Church. Castrén calls them the "Raskolnicken" of Ust-Zylma. They have not a good reputation amongst

the Germans, who have to hire labour for the timber-trade on the Petchora. They are represented as crafty and faithless, and as few of them are employed as possible. Their chief characteristic appears to be that they make the sign of the cross with the thumb touching the second and third, instead of the fourth and fifth fingers, as is the fashion of the Orthodox Church. They have a curious prejudice against tobacco, and will not smoke it themselves nor, if they can help it, allow other persons to smoke in their houses. They seem to have Jewish superstitions against pork and hare, neither will they use any plate, glass, or other article from which persons not of their religion have eaten or drunk. If you offer them vodka in your own glass they will refuse it if they be strict Old Believers, but we must do them the justice to say that, under circumstances of this kind, many we met were superior to their superstitions. But the most extraordinary feature of their religion is that it forbids the use of potatoes as food. They are not very diligent in their attendance at church nor much under the control of their priests, holding the doctrine that every man should be a priest in his own house, and should conduct divine worship there. Our host was very exemplary in this respect when he was sober, having an excellent religious library, and we often heard him and his family chanting Slavonic prayers. One of his books was a Slavonic MS., dating about 1740, and profusely illustrated with full-page coloured drawings, very carefully executed, although somewhat stiff. It appeared to be the history of some of the saints of the Greek Church. I tried very hard to buy this book, but nothing would induce M. Boulegan to part with it. In a corner of every Russian room is a sacred picture or *ikon*, before which every one on entering the room bows and crosses himself several times before

speaking to the host. Some of these pictures are very old, being handed down from generation to generation, and sometimes there is quite a collection of these *ikona*, varied with brass and enamel triptychs of various ages and merit. Every peasant wears a silver or bronze cross. Some of these are of exquisitely delicate workmanship, frequently ornamented with enamel, and occasionally set with jewels. On the back of many of them are elaborate Slavonic inscriptions. A wonderful fertility of resource is found in the designs of these crosses, which are always chaste and artistic, never florid in the ornamentation or wanting in harmony of parts. The great centre of all this religious art is, we were informed, the monastery of Onega, on the south shore of the White Sea.

A peculiarity which we were told marked the Old Believers of Ust-Zylma is a habit which the women have of uttering cries, not loud but frequently repeated. This habit or disease is called "*equarter*," and is brought on immediately by the smell of tobacco smoke. Whether the cry is voluntary, and is intended as a mark of disapproval, or as an exorcism against evil influences, or whether it be a form of hysteria allied to St. Vitus's dance, we were not able to ascertain.

The officials at Ust-Zylma received us with the greatest hospitality. In addition to the letters with which the Governor of Archangel had provided us, it so happened that Piottuch was an old friend of M. Znaminski, the Preestáff, or highest military officer. He had made his acquaintance some years ago, in the days of his exile in Mezén, and both being fond of a day's sport, they had fraternised as sportsmen ought to do. M. Sakeroff, the postmaster, was the other great *chasseur* of Ust-Zylma, and these gentlemen were kind enough to plan several

shooting-parties for our benefit. M. Znaminski was a stout handsome man, very dignified in his manners, but active in the field, and we were under very great obligations to him for his uniform kindness and hospitality to us. Another official who, as well as his charming wife, was most hospitable to us was the Public Prosecutor, M. Miranoff, the "Schlüdevatel," as Captain Engel always called him. We were also most kindly entertained by the "Maravoi," who appeared to be a gentleman of considerable education. Unfortunately none of these gentlemen spoke either English, French, or German, so that our communication with them was necessarily very limited. Interpreting was certainly not Piottuch's forte. Any information we got through him was so largely mixed with his own ideas and opinions, that we soon ceased to attach much value to it, besides which his bad French was often as difficult to understand as the original Russ.

We got a great deal of information respecting the country and its inhabitants from two gentlemen in the employ of the Petchora Timber-trading Company, Captain Arendt, the manager or "Provalychik" in the Petchora, residing temporarily at Ust-Zylma, and Captain Engel, the commander of the steamer belonging to the company, which was then lying in winter quarters at Habariki, about twenty-seven miles down the river. These gentlemen called upon us the day after our arrival, and we were indebted to both of them for innumerable acts of kindness.

Among our first purchases on our arrival at Ust-Zylma was a couple of pairs of snow-shoes, without which it is impossible to travel on the snow. No one can form the slightest idea how utterly helpless one is without snow-shoes when there is scarcely three feet of snow on the

ground. To travel a mile would probably be a hard day's work, completely knocking one up. On snow-shoes we got along comfortably at the rate of three miles an hour, and we soon became tolerably at home on them. They were about seven feet long and six inches wide, made of birch wood, and covered underneath with reindeer skin, with the hair pointing behind. This is absolutely necessary to enable one to ascend a hill, the hair preventing effectually any sliding backwards. The great difficulty with which we had to contend at first was to avoid treading on our toes, but with a little practice we learnt to keep our shoes parallel. In going down hill we had to be careful lest our speed should increase to the point where we lost the control of our centres of gravity.

Every day we sallied out with our guns and snow-shoes in search of birds, but during the first week or so it was somewhat monotonous work, and we soon began to tire of winter. There were very few birds to be seen. In the village the hooded crow, the magpie, and the tree-sparrow were common, and now and then we saw a raven. The peasants brought us capercailzie and hazel grouse, which they shot with their rifles and offered us at twenty kopecks (about sevenpence) each for the capercailzie, and the same sum per brace for the hazel grouse. These birds are probably all residents, though Father Inokentia told us that the hooded crow was a migratory bird at Pustorzersk, arriving there about the 10th of May.

The commonest bird at this season of the year in the streets of Ust-Zylma is undoubtedly the snow-bunting (*Plectrophanes nivalis*). We were told that they arrived about the 1st of April. In spite of its abundance we could not help looking upon it with all the interest

attaching to a rare bird. The brilliant contrast of the black and white on the plumage of these birds, then rapidly assuming their summer dress, was especially beautiful during flight. The flight itself is peculiar, somewhat like that of a butterfly, as if it altered its mind every few seconds as to which direction it would take. It can scarcely be called an undulating flight. The bird certainly does rest its wings every few seconds, but either they are expanded when at rest, or they are rested for so short a time, that the plane of flight is not sufficiently altered to warrant its being called undulatory. The snow-buntings in Ust-Zylma were principally in flocks, but now and then we saw a couple of birds together which seemed to have paired, and occasionally, when the sun was hotter than usual, a solitary specimen might be seen perched upon a rail attempting to sing, but we never heard them sing on the wing. Unfortunately we did not get far enough north to meet with these birds at their breeding stations. In 1874, when Collett and I were in Norway, we found the snow-bunting breeding on the island of Vadsö in the Varanger Fjord. We were too late for eggs, as this bird is a very early breeder, and the young were already in the nest by the middle of June; but we had many opportunities of watching the male birds. They would fling themselves up into the air almost like a shuttlecock, singing all the time a low and melodious warble, not unlike that of a shore-lark, or perhaps still more like that of the Lapland bunting, and they would immediately descend in a spiral curve with wing and tails expanded, and finish their song on a rock. Although we only once or twice heard the snow-buntings attempting to sing in Ust-Zylma, they were by no means silent birds, and were continually calling to each other. The call note is a *zh*, not unlike that of the

brambling or greenfinch. The alarm-note is a loud *tweek*. As they fly together in flocks they merely twitter to each other, not unlike purple sandpipers on the seashore.

Flocks of redpolls (*Fringilla linaria*, Linn.) were also common, but consisting of much smaller numbers than those of the snow-bunting. Many of the males were beginning to assume the carmine breast, showing great promise of beauty when the full summer plumage should be attained. We were informed that these birds arrived about the same time as the snow-bunting. On the outskirts of the town we met with a few small parties of yellow-hammers (*Emberiza citrinella*, Linn.), and occasionally heard their familiar song. These birds are probably also migratory. They were comparatively rare, and as we never saw any farther north, we may assume Ust-Zylma to be about the extreme limit of their summer range. The forests were remarkably silent. Often there was not a bird to be seen for miles. Once or twice we had a distant glimpse of a Siberian jay, a marsh-tit, or a bullfinch, but we did not succeed in obtaining a shot. On the whole our first week in Ust-Zylma was not very encouraging from an ornithological point of view. After eight days work our list of identified birds in the valley of the Petchora stood as follows:

- | | | |
|-----------------|-------------------|-------------------|
| 1. Hooded crow. | 4. Tree-sparrow. | 7. Yellow-hammer. |
| 2. Raven. | 5. Snow-bunting. | 8. Capercaillie. |
| 3. Magpie. | 6. Mealy redpoll. | 9. Hazel grouse. |

—certainly a very meagre list. Notwithstanding such a bad beginning, we did not feel disheartened, but laid all the blame on the weather. We could not help smiling at our alarm in Archangel lest summer should come before we could reach the Petchora. Nearly three weeks had gone by, and summer and the summer birds seemed as far off as ever. The thaw made no progress. Sometimes

it was hot enough in the sun in the daytime, and the glare of the sunshine on the white snow forced us to wear snow spectacles, but it always froze again at night, and if a few days sunshine made any impression on the snow, a raw cold day, with a high wind and a more or less heavy fall of snow, made everything look and feel as winterly as before. Piottuch went over to Ishma with M. Znaminski, but did not shoot a bird. He told us that he saw two birds of prey, most likely hen-harriers, and M. Znaminski informed us that we must not despair, as a swan had been seen flying over.



OLD RUSSIAN SILVER CROSS



CHOOMS OF THE SAMOYEDS

CHAPTER VI.

THE ZYLMA AND ITS NEIGHBOURHOOD.

The Samoyedes—Reindeer—The Tundra—Nomad Life—Diseases of Reindeer—Samoyede National Character—Trip to Umskia—Bad Roads—Paucity of Birds—Easter Holidays—Drunkenness—Heavy Snowfall—Our First Bird's-nest—Excursion to an Island in the River.

DURING this comparatively idle time we picked up what information we could about the Samoyedes. Captain Engel, who was a wild, harum-scarum, devil-may-care fellow, and had been in most parts of the world, had seen a good deal of the Samoyedes. Some years ago he was wrecked in the lagoon of the Petchora, not far from the island of Varandai, had been hospitably received by these wandering people, had made his way across country to Kuya, and had remained in the district ever since. The information which we obtained

from Captains Arendt and Engel may be summed up as follows :

The Samoyedes are a Mongolian race of nomad habits. They live almost entirely upon reindeer. In summer they live in tents made of birch-bark ; in winter their tents or chooms are made of reindeer-skins. They eat the flesh of the reindeer and drink its blood. Their dress is made of its skins, neatly sewn together with its sinews. The wealth of a Samoyede consists entirely in the number of his reindeer ; each knows his own by marks cut upon the animal's ear. In summer the Samoyedes live on the tundras. Some go to the Kanin peninsula, some to the Timanski Tundra or Malyazemlia, and others to the northern shores of the Great Tundra, the Bolshaizemlia of the Russians, the Arkya-ya of the Samoyedes. These tundras are naked tracts of slightly undulating land, rolling prairies of moor, swamp, and bog, full of lakes, and abounding with reindeer-moss, upon which the reindeer feed. In summer the tundras are quite impassable for horses, but the reindeer, with their broad feet, will carry a sledge over places where it would be impossible for a man to stand. The Samoyedes are always on the tramp, seldom remaining long in one place. A considerable portion of their lives is spent in packing, unpacking, and travelling. In winter the cold is too great for the reindeer to find food under the frozen snow of the Arctic latitudes, and in summer the poor animals would be driven frantic by the mosquitoes which swarm in the more southerly regions. In summer the Samoyedes occupy their spare time in shooting ducks and geese, making their clothes, reindeer harness, etc., and in winter they come down to the towns and villages—Kuya, Pustozersk, Ust-Zylma, Mezén, Pinega, and others, and barter their surplus reindeer-skins, horns,

feathers, etc., with the Russian merchants for bread, vodka, and other articles. Those that come down to the more southerly towns have learnt the value of money, and prefer to sell rather than barter. They used to be very clever with the bow and arrow, but now they all use old-fashioned small-bore flint-lock rifles. Some of the Samoyedes are very rich. A reindeer is worth about seven or eight roubles, or an English sovereign. Some of the Samoyedes are said to possess as many as 10,000 reindeer. Of late years the reindeer have suffered much from disease. Captain Engel was of opinion that this disease was allied to cholera. The animals turn dizzy, and run round and round like sheep attacked by "sturdy." The reindeer also suffer much from a hideous parasite. One day, as we were passing a herd of them in the streets of Ust-Zylma, Engel took hold of one of the animals, and groping among the long hair on the small of the back, he presently squeezed out of the flesh one of these disgusting creatures. In a short time he produced a dozen of them. They varied in size from half an inch to an inch in length, the diameter being from half to a third of the length. The surface was covered with rudimentary scales. The lower part of the body was tapered, and the head rounded with two indistinct jaws. We did not notice even the rudiments of legs. They are, no doubt, the larvæ of some fly or beetle. Engel told us that they sometimes reached a length of four inches or more. Some herds of reindeer are perfectly free from these creatures, and others suffer very much from them.*

The Samoyedes are an acute and intelligent people, but on the whole they are not so sharp-witted as the Russians. They are good-natured and harmless, except when they are drunk, then they become quarrelsome and

* Probably the reindeer bot (*Hypoderma tarandi*), first described by Linnæus.—ED.

dangerous. They are passionately fond of vodka, a fairly mild, and to us by no means palatable spirit, distilled from barley, and they easily become intoxicated. In some places they distil an intoxicating drink from a fungus. If a drunken Samoyede quarrels, and calls for help, the other Samoyedes will at once help him. Engel's recipe for dealing with a dangerously drunken Samoyede was to supply him with more drink, when he speedily becomes maudlin and begins to sing. The Samoyede women are generally betrothed very young, about thirteen, and often have children at fourteen. Some Samoyedes have more than one wife, but this is very rare. The race is no doubt slowly dying out, and is to some extent becoming mixed. They are acquainted with the stars, and use them as a compass; but Engel told us of a very curious circumstance which came under his observation when he was brought across the tundra in the sledges of the Samoyedes. In stormy weather, when it was impossible to determine the direction, the Samoyede used to scrape away the snow down to the moss, which he examined, and altered his course accordingly. The Samoyedes do not live to be very old, but grey-haired old men and women are seen among them.

After we had been a week at Ust-Zylma without seeing any sign of summer or summer birds, we began to find time hang heavy on our hands. Picking up information about the Samoyedes and the Old Believers was such unsatisfactory work, from the contradictory nature of the reports, that we soon got tired of it, and longed for something better to do than shooting redpolls and snow-buntings. As we had not met with any Siberian jays or bullfinches at Ust-Zylma, we decided that the best way to while away the time was to go back again to Umskia for a day or two, in the hope of finding as many

birds as we saw there before. We took the small sledge and a couple of horses, and travelled all the Friday night. The journey was a very eventful one. The sledge, it may be remembered, had turned over once with Piottuch, but he had travelled at least 100 miles in safety afterwards, and we had almost forgotten the circumstance. We soon found out, however, that something was radically wrong with the crazy machine. It must have dropped its centre of gravity altogether on the *via diabolica*, for between Ust-Zylma and Umskia (a distance of thirty-six miles) we were upset and tumbled over into the snow no less than fifteen times. This was altogether a new experience for us, but we survived it without any damage, thanks to the thickness of our malitzas and the depth of the snow.

Arrived at Umskia we were disappointed to see so few birds. The Siberian jays had disappeared altogether. The snow-buntings were represented by a solitary individual perched upon the summit of a lofty larch. Occasionally two or three redpolls were to be seen, and at long intervals during the day a pair of bullfinches put in an appearance. We saw a pair of white-tailed eagles (*Haliaeetus albicilla*, Linn.) soaring over the forest, but they never came within gunshot. The day was cold, with only occasional gleams of sunshine and continual threatenings of snow, and no birds seemed to be feeding. We took a long walk on the road, and made several excursions into the forest and down the river on snow-shoes, but scarcely a bird was to be seen. At this season of the year the most absolute silence reigns in these drear Siberian forests. In the afternoon we tightened up our "pavoska," and so far succeeded in restoring the centre of gravity that we returned home without a spill. We saw only two birds either in going or returning, a Siberian jay in going, and a capercailzie (*Tetrao urogallus*, Linn.) in returning.

On our arrival at Ust-Zylma at two o'clock on Sunday morning, we found service going on in the church in celebration of Easter Eve. We went with M. Znaminski to the 3 A.M. mass, and after service breakfasted with him, and at 7 A.M. turned into our hammocks for an hour or two's rest. The Easter holidays lasted three days, during which we saw plenty of eating and drinking, and some (but not much) drunkenness. The Russian peasantry in Siberia easily get drunk. They drink vodka neat, and two or three glasses are enough for most of them. There is one very curious circumstance about drunkenness in this part of the world. So far as we could ascertain, with the Russian peasants drunkenness never produces crime. When a Russian peasant is drunk, he is not quarrelsome like most Englishmen, but simply becomes obtrusively affectionate. He wants to embrace you, and kiss you, and be your very best friend. During these holidays, when we were returning from the hospitable boards of our Russian or German friends in the small hours of the morning, we would occasionally meet one or two victims of excess of vodka lying in the snow, their malitzas being warm enough to prevent them from being frozen to death.

On the Sunday night there was a very heavy fall of snow. At least a foot must have been added to the depth. On the Monday morning the weather was very stormy, and the fresh fallen snow was drifted into hills and valleys. The change in the appearance of the town was wonderful. The vast dunghill of Ust-Zylma had put on its Easter holiday attire, and was once more pure as the driven snow. Everything was covered with a layer of white powder, dry as dust, and white as (the only possible comparison)—white as itself. At night the effect was still more striking. The snow on the railings,

on the house tops, and wherever it had been disturbed by footmarks, was white, and all the rest was a pale delicate cobalt-blue.

On Tuesday the 28th of April we got our first nest. It was brought in by some peasants. It was the nest of a Siberian jay, and contained four eggs. This bird is probably the earliest breeder in these parts, and no doubt winters in the Petchora district. The nest was not so flat as we expected, and was composed almost entirely of lichens, with a few pieces of matting, hair, and feathers. The foundation was made of slender pine twigs, and the inside was profusely lined with feathers.

The snowstorm having now ceased, we made an excursion on snow-shoes to an island on the Petchora, and afterwards visited the opposite bank of the river—*l'autre côte*, as Piottuch called it. It was remarkable how very few birds we saw. I twice came across a flock of bullfinches, all males, and shot three of them. I also saw and shot a solitary tit, very nearly allied to our marsh-tit. It is a greyer bird than ours, with the white cheeks much whiter, and the black hood extending much farther down the back. We also saw footmarks of hares, and found several snares set by the peasants to catch them. The next day we visited the same ground again. We did not see a single bullfinch, but caught a glimpse of a small spotted woodpecker. We crossed over to the banks of the Zylma, but the birch woods there produced nothing but a solitary marsh-tit, which I shot. The woods round Ust-Zylma seemed to be absolutely empty of bird life. Our first eight days had produced only nine species of birds. During the following ten days we increased our list by only three birds—the bullfinch, the Siberian jay, and the Siberian marsh-tit.



LASSOING REINDEER

CHAPTER VII.

THE SAMOYEDES.

Trip to Habariki—Samoyedes—Lassoing Reindeer—Dogs of the Natives
—Samoyede Sledges—Reindeer Harness—The Chooms—Samoyede
Hospitality—Marriage Ceremonies—Funeral Rites—Religion.

It was quite obvious that we should make little or no progress in our ornithological researches until summer came. We accordingly laid ourselves out to pick up further information about the Samoyedes, so that our time might not be absolutely wasted. We had not yet visited any of their chooms, or tents, and we were glad to learn from Captain Engel that there were several in the neighbourhood of Habariki. On Thursday morning, April 29, we sledged over to that village, a distance of forty versts. The road was about two-thirds on the Petchora, and the remaining third across country,

principally islands. It was so good that we accomplished the distance in four hours, stopping for half an hour mid-way to feed the horses. We scarcely saw a bird on the whole journey.

Habariki is a poor little village, without a church, and containing not more than a dozen houses. The sandy banks of the river are about fifty feet higher than the level on which it is built, and keep it out of the reach of the floods that come with the thaw. The village was admirably adapted for the winter quarters of Sideroff's steamer, which lay below the bend in a little creek running back out of the Petchora, protected there from danger of being smashed to pieces by the blocks of ice that crash down on the breaking up of the river.

After a good lunch we hired two sledges and started in search of the Samoyedes with Captain Engel and a Russian, the engineer of the steamer. We had ascertained that there were some chooms about four versts off, but just as we arrived at the place we found everything ready for a move northward. The chooms were taken down and packed on sledges, and the reindeer, to the number of about 500, were collected together; and before we had been there ten minutes the order to march was given. We were informed that they were not going far that afternoon, and would probably erect their chooms in the course of the evening within a verst of Habariki, but that before doing so they were going to take out fifty of the reindeer which belonged to a Russian. We were anxious to see the operation of lassoing, and drove with the Samoyedes in our sledges to the place selected for the purpose. As soon as we left the road our horses stuck fast with the snow up to their traces, and we were glad to give up our almost ineffectual struggle to get along on foot, and seat ourselves on one of the reindeer

sledges, which soon brought us to the spot. It was admirably chosen—a large open space—perhaps half a mile across, sufficiently hollow to give it the effect of a natural amphitheatre surrounded by forest. In the centre was a slight elevation, where three or four sledges were stationed, commanding a fine view of the herd of reindeer gathered round. A little below us in the hollow were about a score of sledges with the women and the baggage.

The Samoyedes proved themselves expert in throwing the lasso. In the left hand they held a small coil of rope, in the right hand the larger half. The lasso was thrown with an underhand fling, and nearly always successfully over the horns of the animal at the first attempt. The left hand was then pressed close to the side so as to bring the shock of the sudden pulling up of the reindeer at full speed against the thigh. When a reindeer found itself caught, it generally made desperate efforts to escape, but was usually on its haunches gasping for breath in a few seconds. The Samoyede then hauled in the rope, or, if it had run out nearly to its full length, another Samoyede came up and began to haul it in nearer to the animal. When he was close to the deer he took hold of its horns, and with a side twist brought it down on to the snow. The Russian to whom the fifty reindeer belonged then approached, and taking a thong of three-plait matting from a bunch at his belt, tied one of the animal's forelegs to the hind leg on the same side; crossing the feet, but keeping the legs parallel at the point of ligature.

As soon as the reindeer was left, he made wild efforts to rise and walk; and sometimes succeeded in hobbling a few paces. Finding his strength give way with his frantic efforts to escape, he generally rested with his fore-knees on the snow for a time; and finally lay down quietly. A dozen reindeer were soon on the ground.

The scene became quite exciting; the reindeer were wheeling round and round in circles. The dogs tied to the sledges barked furiously and evidently wished to have a share in the sport. The dogs selected by the Samoyedes to help them to get within lasso range of the deer rushed frantically about at the command of their masters, whose loud cries added to the excitement of the scene. Sometimes a herd of reindeer ran over a place where the snow was unable to bear their weight; and it was interesting to watch them snorting and plunging. As the number caught increased, the difficulty also increased of identifying and catching the remaining few of the fifty that belonged to the Russian, and the Samoyedes with the lassos were driven about in sledges at a rapid pace to get within reach of the animals they wanted. The deer kept together; if one ran out of bounds a dog was sent after it and soon brought it back again. In one respect the reindeer resemble sheep; wherever one goes, the rest try to follow.

In this herd the greater number were females (*vah' shinka*), with good horns; these they do not cast till they drop their young. A few were males (*horre*), their new horns just appearing. Those chiefly used in the sledges were cut reindeer (*büek*), also without horns. Some of the hornless animals leaped right through the lasso and others were caught by the leg.

The lasso is a cord about 100 feet long, made of two thongs of reindeer-skin plaited together, so as to make a round rope three-eighths of an inch in diameter. The noose is formed by passing the cord through a small piece of bone with two holes in it. The lasso passes freely through the hole, while the end is fastened to a little bone peg with a bone-washer to prevent it slipping through the other hole.

The dogs were all white except one, which was quite black. They were stiff-built little animals, somewhat like Pomeranian dogs, with foxlike heads and thick bushy hair; their tails turned up over the back and curled to one side.

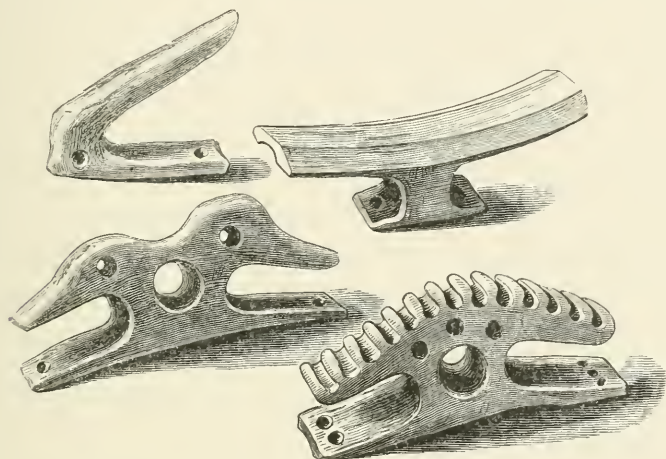
The next morning we turned out of our hammocks at four and strolled in the brilliant sunshine, hoping to meet with some birds; but, with the exception of the hooded crows, magpies, snow-buntings, and redpolls, we met with none feeding. In the woods we saw an eagle, a pair of marsh-tits, a pair of Siberian jays, and occasionally a pair of ravens.

After breakfast we visited the chooms, and very picturesque they looked in the white landscape in the dazzling sunshine. Here and there a few willows dotted the undulating ground near a winding rivulet. The reindeer were not to be seen, all were away feeding. Two chooms stood a few feet apart from the rest; in front of these the sledges were drawn up, twenty-three in number, some light and elegant in shape, with four carefully hewn ribs on each side, and a low sloping back. In these the Samoyedes and their families travelled. Others were not quite so finely finished, and had only three ribs on each side; these were used for the lighter baggage, reindeer-skins, malitzas, and so forth, covered over in some cases with a tarpaulin made of pieces of birch-bark, neatly sewn together with reindeer-sinew. Other sledges again were of much stronger and clumsier make, with only two ribs on each side, adapted for the heavy baggage. Some of these were a simple gantry upon runners, carrying casks of reindeer-meat, others a wooden chest with an angular roof like the recognised Noah's ark model, containing loaves of black bread and other perishable articles.

The harness of the reindeer is very simple. The saddle is a plain band of tanned reindeer-leather, about eight inches broad, hanging a few inches below the body on each side. About six inches from each end a double thong of reindeer-skin is attached, and forms the belly-band. The thong passes through the saddle, and is fastened to a button (*stchorlak*) made of reindeer-horn or bone. These buttons are about two inches in diameter, with two oval holes near the centre for the thong to pass through. Some of them are round, others square with the corners off, others hexagonal, and others again hexagonal with every alternate side concave, whilst some are merely irregular rhomboids. All the buttons are bevelled on the edge, and generally slightly hollowed to fit the curve of the reindeer's side. On the near side of the near reindeer is a piece of carved bone, into which the reins can be hitched, called *halsii* (the *h* pronounced slightly gutturally). This part of the harness is of divers shapes and patterns, and seems to be especially the part on the ornamentation and variation of which the Samoyedes expend their spare time and taste.

The simplest form is a hook to receive the reins. A more elaborate one is a double hook, the reversed hook being obviously added only for the sake of ornament. Others again have the double hook, with a variety of ornamental carving added. On the off side of the saddle, opposite the *halsii*, is a leather loop to which the bridle-rein of the next deer is attached. The collar is a narrow band about three inches wide, also of tanned leather, passing round the neck. The two ends of this collar are fastened together by the trace which passes from the sledge, between the hind legs of the deer, between the body and the belly-band which hangs rather loosely, then between the forelegs to the breast, where it passes

through the two ends of the collar, and is secured to a bone peg or a *paysik* of simple construction. The head-piece or halter (for no bit is used) is called *syahney*. That of the leading deer consists of a square straight piece of bone or horn, about four inches long, on the right cheek, under the root of the horns, with a hole at each end, and a second piece of horn, a semicircular or half-round section, bending nearly rectangularly, not quite in the



REIN RESTS

middle. This piece of horn is hollowed or deeply grooved on the flat side, and has a hole bored through at each end, and a third hole about half an inch from that one at the long end. The position of this piece of horn is with the short end halfway across the forehead and the long end in a similar position to the straight piece of horn on the other side of the head. Both pieces are more or less ornamented with simple carving ; they are fastened together, the ends about a couple of inches apart, by a short thong of plain or plaited leather, passing through the holes at one end of each piece, and tied

across the forehead. To the other ends of the pieces of bone, plain thongs of leather are attached, one passing behind the horns, the other under the neck. Through the third hole, in the long side of the bent piece of horn, passes a thong fastened to the single rein, either with a simple tie or with an intervening swivel made of horn, called by the Samoyedes the *siirnye*. The head-pieces of the other deer are slightly different. The bone pieces under the horns are slenderer, but slightly curved, and both alike. They are tied together across the forehead, as is the head-piece of the leading deer, but the other ends are tied to the apex of a piece of bone or horn, shaped like an isosceles triangle, with the angles cut off square, the angle at the apex being very obtuse, and the basal line slightly concave. These triangular pieces are placed nearly over the jugular vein, and are fastened at one end under the neck, and at the other at the back of the head. The bridle-rein is attached at one end to the thong passing at the back of the head, and the other to the saddle of the deer to the left or near side. The wood or bone blind pulley through which the traces run is called *pate-chay*, it is so arranged that any deer not doing its fair share of the pulling drops behind against the sledge. The animals are urged on by a long pole, with which they are hit or poked; it is called the *toor*, and the bone button at the end of it the *toor-mahl*. Behind each sledge, on each side, there is a thong of leather passing through a hole pierced through one end of a bit of bone about nine inches long. A second thong of leather forms the link connecting this to a second bone, which can be fastened to the head-piece of the deer of the following sledge, which thus requires no driver. This rude chain is called the *pooinye*. The swivel is occasionally a brass one, bought from the Russians. Now and then a

brass ring is seen on the head-piece, and sometimes tassels of plain leather, shaped like luggage labels and stained vermilion, ornament it.

The chooms were shaped like ordinary regulation tents, about twelve feet in diameter and height; they were supported inside by some thirty slender birch poles, converging to a cone, tied together in a bunch at the top. This skeleton was covered with old, dirty, and much-patched reindeer-skins, sewn together and lined with coarse and half-rotten canvas, probably old sails. Some cords of twisted reindeer-sinew strengthened the structure, and an opening about a foot wide was left at the summit of the tent to serve as a chimney. We drew back the covering overlapping the opening used as a door and entered. Snow, heaped up to the height of about a foot, protected the choom from bottom draughts. A wood fire burned in the centre upon a thin metal plate; an ordinary gipsy kettle was suspended over it by a simple arrangement. Mats of slender birch-bark, woven together every six inches by a warp of string, were placed on either side of the fire; over these were stretched another mat made of some kind of rushy grass. Around were packed various articles of clothing, wooden bowls and spoons of Russian origin, a Russian box containing a china tea-service; a heap of reindeer giblets, part of which were doubtless stewing in the kettle, and sundry other articles. Exactly opposite the door there hung one of the Onega bronze bas-reliefs of saints or virgins, framed in a rudely carved piece of wood, shaped somewhat like a cross.

After purchasing some reindeer harness, we were invited to drink a cup of tea and to eat a kind of spiral biscuit. Our hostess had just been sewing; a steel needle, a tailor's thimble, and thread of reindeer-sinew

lay in a corner of the tent. The smoke annoyed us when we stood up, but we did not feel it much when seated. The Samoyedes sat cross-legged on the ground, and tea was served on a little table about six inches high, just large enough to hold half a dozen cups. As usual, we found our hosts very ready to give us any information we asked them.

The Samoyedes never seemed annoyed at our taking notes among them; they struck us as a good-tempered, somewhat phlegmatic race. They carried old-fashioned Russian flint-lock rifles, but we could not rouse their interest in our breech-loaders; they do not appear to work much in metals. They always carry a knife, no doubt of Russian make, but they are very ingenious in making handles and in ornamenting them. Patterns of various grades of elaboration are carved upon them, and the patterns filled up with melted tin. They use a small saw, a rude form of brace and bit, and also the indispensable axe.

Like the Russians, the Samoyedes have beautifully white and regular teeth. They are very fond of chewing the resin which they get from the Scotch fir, which doubtless assists in keeping the teeth clean.

As we are now on the subject of this strange race, we may as well insert here some details we gathered a few days later, after our return to Ust-Zylma, from a Samoyede who drove up in his reindeer sledge from a choom near Habariki. Our interpreter was a Polish Jew, banished by his father to Siberia, because he had adopted the religion of the Greek Church. He translated the Samoyede's bad Russian into worse German.

We were informed that when a young Samoyede desires to marry, and has come to some understanding with the damsel of his choice, he visits her father's

choom, and with a short stick taps him, and then the mother of the maiden, on the shoulder. He then demands the girl in marriage, and offers the father and mother a glass of vodka, which he has brought with him. As a token of his goodwill the father drinks the vodka; he tells the young man he has no objection, but that he must ask the girl's consent. The preliminary ceremony of asking papa having been gone through, the young man retires. A few days later he comes again to the choom; this time accompanied by what servants he has, and provided with plenty of vodka. His retinue remain outside, while he enters the choom, and seats himself by the side of his lady-love. The father hands the young man a glass of vodka; he drinks half, and hands the half-full glass under his left arm to the girl, who finishes it. The father then gives his daughter a glass of vodka, who in like manner drinks half of it, and presents the remainder with her left hand under her right arm to her lover, who drains the glass. After this the father hands a piece of raw flesh to the young man, who eats it, and then takes a piece from the floor, eats half, and presents the other half under his left arm to the girl to finish. She, in her turn, takes a piece of raw flesh from the floor, eats half, and likewise hands the other half under her right arm to the young man to finish. Then follows the eating and drinking that in barbarous, as in civilised nations, is considered necessary to ratify the ceremony. Before night an old man, called a *shaman*, a kind of magician or medicine-man, carrying a drum, visits the choom; of him the bridegroom asks certain questions concerning his bride. If the old man knows nothing against her he begins to play upon his drum, and the marriage is completed. If, however, the magician speaks evil of the girl, the young man has the option of leaving

her there and then, or if he be still enamoured of her charms, it is open to him to bargain with her father to take her for a month or a year on trial. At the expiration of the time agreed upon, if the pair suit each other, they consider themselves married for life. On the other hand, should they not agree, they can separate at the end of the time specified; but in that case the man must provide for any children born within the period. After the marriage festivities are over, the young couple are left alone in the choom of the bride's father.

It is customary for the bridegroom to present his bride with the skin of a black fox. The girl's father gives his son-in-law a choom, with all its appurtenances, and five, ten, twenty, or thirty reindeer, according to his wealth. If the bridegroom be rich, he gives his father-in-law money to the amount sometimes of two hundred roubles.

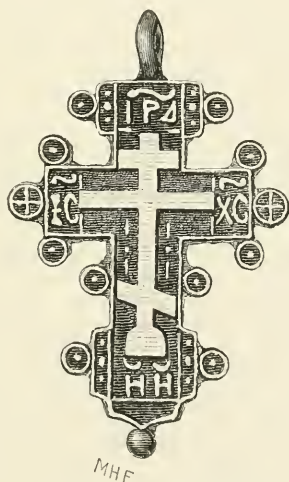
Since the adoption of the Russian faith by the Samoyedes they bury their dead. Previous to their conversion, when one among them died he was fully dressed and, in his best malitza and soveek, was laid flat on his back on the tundra. His favourite *büek* reindeer was killed and laid by his side, with his best harness and his driving-pole and bow.* The choom is taken down at once, and the camp is broken up amidst much weeping and lamentation. If possible, the place is never revisited. The Samoyedes believe that if the dead man's property were not left with him his spirit would follow them.

The Samoyedes used to have wooden idols, to which

* Captain Hall, in his "Life with the Esquimaux," mentions a similar custom existing among them. The Innuits seal up their dying in snow-huts, or *igloos*, where they are allowed to die alone. The blubber-lamp, as well as the fishing and hunting instruments of the dead, are always laid by his side, and the place is abandoned.

they sacrificed reindeer.* In order that the reindeer may reach the unseen god, of whom the wooden idol is evidently considered but the symbol, it must be killed in a peculiar fashion. A running noose is made in the middle of a cord and put round the horns of the deer ; a Samoyede holds the two ends. Another noose is put round the animal's hind feet, and while he is thus held at full stretch, he is stabbed in both sides with two pieces of wood (not with a knife); then the spirit of the reindeer is supposed to be sent to the god. The greater number of Samoyedes have adopted the Russian faith, and have been baptized into the Greek Church, but many of these still retain their ancient beliefs, and sacrifice to their idols, while in the more easterly parts of the vast region inhabited by this people, many have not yet been "converted."

* William Govedon, who wintered at Pustozara, 1614-15, tells us that the Samoyedes had then "no true knowledge of God, but worship blocks and images of the deuill, unto which they strangle tame deere."—*Purchas his Pilgrimes*, lib. iii. ch. 12.



OLD RUSSIAN SILVER CROSS



A SPILL IN THE SNOW

CHAPTER VIII.

LIFE IN UST-ZYLMA.

May-day—Snow-buntings—Jackdaws—Game—Birds of Prey—Sunday at Ust-Zylma—A Fire—Marriage Ceremony—Tenure of Land—The Commune—Preparations for Summer.

ON May-day the thaw continued in real earnest. A warm wind and a hot sun made great havoc with the snow. All traces of the heavy fall of the previous Sunday night soon disappeared, and a considerable portion of the old accumulation of winter melted. Ust-Zylma became once more a vast dunghill, and on the hills, where the snow in some places lay exceptionally deep, it was too soft to bear our weight, even on snow-shoes. We attempted our usual ramble in the woods at the back of the town; but travelling was very laborious, and we returned to our quarters with broken snow-shoes, and without having

remarked anything of special interest. With the exception of a yellow-hammer, which was making a feeble attempt to sing, we scarcely saw or heard a bird. One effect of the thaw was to banish the snow-buntings from the town to the country. Although this bird is thick-billed, and undoubtedly feeds on grain and seeds during the winter, it appears to change its diet to some extent during the breeding season. When I was in Lapland I found it nesting among the rocks on the island of Vadsö, in the Varanger Fjord. Not far distant, down by the shore, was the great whaling establishment of Mr. Foyne, where on an average three whales a week were cut up. The snow-buntings constantly visited the yard, which abounded with insects attracted by the offal; and the stomachs of some which I shot and skinned proved to be full of these.

During this sloppy season we confined our walks pretty much to the town itself, carrying our walking-stick guns in case a new bird should turn up. On the 3rd of May we were rewarded by seeing for the first time a pair of jackdaws. It was contrary to law to shoot in the streets, and the birds were within a stone's-throw of the house of the public prosecutor. I shot one of them, as I thought, very cleverly, on the sly, but I found that my attempt at concealment had been a failure, for a day or two afterwards, whilst discussing our walnuts and wine with the chief magistrate at the public prosecutor's hospitable table, we were kindly cautioned to shoot as little as possible in the streets.

The liberal hospitalities of our friends helped to beguile the time during the thaw; and occasionally the peasants offered us birds, which provided variety for our larder, and sometimes interested us and found employment for Piottuch. We bought four capercailzies for

eighty kopecks from one of our friends the Samoyedes who had shot them with ball. Hazel-grouse (*Bonasa betulina*) were also frequently brought to us, at twenty kopecks per brace. They are most delicate eating, and are considered by many to be the finest game that can be brought to table.

Winter returned on the 4th of May, when a raw west wind brought a heavy storm at noon, after which snow and bitter cold continued, with occasional high wind, till the 8th. We went out, notwithstanding, struggling on snow-shoes across deep ravines and through bushes and plantations. We also made an excursion within the island in search of birds. For some days the snow-buntings remained outside the town in such immense flocks that when they rose the whirring of their wings could be heard at some distance. On the 6th the snow drove them back into Ust-Zylma, also small parties of redpolls, which follow the buntings very much as starlings follow rooks. When we first met with the flocks of snow-buntings we found them to consist principally of males, but as the season advanced the females largely predominated. On the 4th of May we saw a white-tailed eagle and a hen-harrier, and on the following day we had an excellent sight of a merlin. Magpies were as abundant as ever, but, like the snow-buntings, they had moved into the country, and on the 5th we discovered a nearly completed nest in a spruce fir, built about five feet from the ground. The birds were most vociferous, and used every artifice to decoy us away from their property.

On the 8th of May summer seemed farther off than ever. On the previous day the weather had been very changeable—alternately warm, snowing, hailing, sleeting, with an occasional gleam of sunshine, and a cold wind,

but on the whole a thaw. The next day the morning was bitterly cold, with the north wind blowing hard. In the afternoon the wind veered to the west, with a heavy fall of snow. At midnight the wind dropped, the sky became clear, and the thermometer went down to 16° . The landscape was again white and frost-bound. It looked exactly like mid-winter, except that at that hour of night we could see to read a newspaper out of doors. The climate of these regions is very curious at this time of the year. The change is sudden and violent—a leaping from mid-winter into summer, without any intervening spring.

We strolled out in the morning, not expecting to see anything new. We shot a tree-sparrow and a yellow-hammer, and were returning home somewhat disheartened, in spite of our unexpectant mood at starting, when a hen-harrier suddenly put in an appearance. He did not, however, come within range, and we went into a little valley, there to wait for him or a chance raven. By-and-by a small hawk crossed in front of us. We followed it up the hillside, caught sight of it again, watched it alight on a heap of manure, quietly stalked it, and shot it. It turned out to be a female merlin. Whilst we were carefully putting it away, an eagle passed almost within shot of us. In one of the cottages a peasant showed us the skin of an eagle-owl (*Bubo maximus*). The next evening we strolled out on the banks of the Petchora. Brilliant sunshine flooded the earth, not a cloud was in the sky; but it was cold and winterly as Christmas. Flocks of magpies and of hooded crows were almost the only birds we saw. They passed us on the wing, evidently going to their resting-places in the woods.

The week had not brought us many birds, but we knew summer was at hand, and we waited patiently.

Meanwhile we mingled with the inhabitants of Ust-Zylma and observed their ways. Sunday seemed a day devoted to calling, and many sledges used to drive up to the house where we were from the neighbouring villages. The peasants combined business with these visits to town, and we bought four skins of white fox and one of grey fox for nine roubles and a half, from one of Boulegan's visitors.

Once we had an opportunity of seeing the people of Ust-Zylma turning out to extinguish a fire. A small conflagration burst out in the house of Captain Arendt. All the villagers trooped to the spot, armed with axes, wooden shovels, and boat-hooks. It is the law that in case of fire every peasant should assist in putting it out. On each house a board is nailed up, on which is roughly sketched the article its inhabitants must furnish to assist in extinguishing the flames. The people keep to their primitive ways and habits. We watched a peasant one day shooting at a mark with a flint-lock rifle. The barrel was very thick, and the bore the size of a large pea. He carried a spiral coil of lead, and, when he wanted a bullet, bit a piece off with his perfectly white regular teeth, and chewed it into a rough sphere. His gun, which he told us was worth five roubles, was ornamented all over the stock with by no means inartistic carvings.

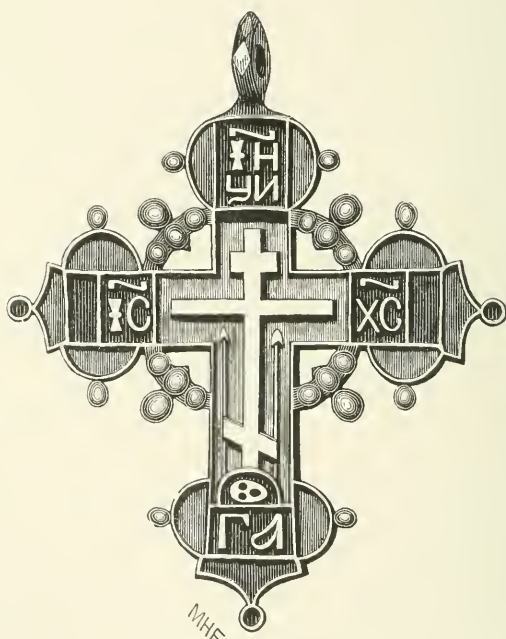
On one occasion we assisted at a wedding in the Orthodox Greek church. The marriage ceremony took place in the afternoon, and was sufficiently imposing. The priest met the couple at the vestibule of the church. After going through a form of prayer, he presented the bride and bridegroom with a lighted taper, which he had first crossed over their bowed heads; the rings likewise were crossed over their heads, as were also a pair of

gold crowns before being placed upon them. The bible and the crucifix were kissed. A silver cup of wine was quaffed by the plighted pair, each drinking from it alternately. Censers of incense were swung. The priest, the happy couple, and the assistants bowed and crossed themselves continually, and between each part of the ceremony prayers were offered.

We were not very successful in our attempts to obtain accurate information as to the tenure of land. It was sometimes difficult to reconcile conflicting statements. Most of our informants, however, agreed that they or their ancestors were formerly serfs of the Crown, that after their emancipation the land remained the property of the Crown, and was leased to the village or commune at a nominal rent. The affairs of the commune are managed by a parliament or town council, composed of every householder, electing a mayor or *starrosta* (literally, oldest man), whose term of office is three years, and who is responsible to the Government for the rent or taxes payable by the commune. Every three years a redistribution of land takes place, the arable land being divided amongst the householders in lots proportionate to the number of individuals living in each house. Five hundred roubles will build a handsome habitation in Ust-Zylma. We were informed that every peasant was annually entitled to a fixed number of cubic yards of firewood without charge, and to a limited number of balks of good building timber, which he was free to sell if he did not require to use it.

The near approach of summer was the signal for unusual exertions on the part of the peasants. Procrastination seems to be a Russian national vice. Now, when the horses were nearly worn out by long feeding upon bad hay, and when the roads were very heavy by

reason of the thaws, the poor animals had to work double time. A quantity of last year's fodder still lay on the flat land on the other side of the Petchora, which, if left, would inevitably be swept away when the frozen river broke up ; the cattle had to be taken across the ice and housed in a place of safety, there to wait until the floods subsided on these flat stretches and the new rich pasture had begun to spring up. The women and children had also to be transported across, to look after the cattle ; whilst the men went down the river to fish, leaving Ust-Zylma as deserted for three months as a winter village in the Parnassus.



OLD RUSSIAN SILVER CROSS



SHOOTING WILD GESE.

CHAPTER IX.

THE ADVENT OF SUMMER.

Mild Weather—Bear-tracks—Saddle of Bear—First Rain—Six New Migratory Birds—Magpie's Eggs—Cessation of the Winter Frost—Return of Winter—A Wild-goose Chase—Cachets—Night on the Banks of the Petchora—The Silent Forest.

ON the 10th of May we had for the first time real summer weather, which continued for some days. It thawed in the shade as well as in the sun; but, as there was not much wind, the snow melted slowly. We drove up the Zylma and took a long walk in our snow-shoes, returning across the island; but the pine and birch woods were still almost deserted. We shot a pair of marsh-tits, heard the cry of a great black woodpecker, and saw four wild geese flying over our heads. On the island we fell in with a small flock of shore-larks (*Otocorys alpestris*), and

succeeded in shooting four while feeding upon the bare places on the banks of the island. We also started a pair of wild geese and a large owl, probably the snowy owl, which alighted on a heap of snow in the middle of the Petchora. Its flight resembled that of the glaucous gull, but it occasionally skimmed close to the snow for some distance.

We traced along the snow the footprints of a bear and its cubs, about a day or two old. The traces of Bruin's presence had an added interest to us from the fact that for the last two days we had been breakfasting and dining on a saddle of bear, and most excellent we had found it, much better than beef. The animal we had been feasting on was about a year old ; it had been turned out of its place of hybernation by some woodcutters, who had cut down the tree at the root of which it was sleeping. I bought the skin, and had an excellent hearth-rug made of it.

Summer now seemed to have suddenly burst upon us in all its strength, the sun was scorching, the snow in many places melted so rapidly as to be almost impassable. The mud banks of the Zylma were steaming from the heat. On the 12th of May, about noon, the weather grew hazy, with a very conspicuous halo around the sun-like a dull circular rainbow ; the wind was warmer than it had yet been, and in the afternoon there came on a steady rain, the first rain we had seen since we left home. Sancho Panza says that one swallow does not make a summer ; but the arrival of six species of migratory birds within two days ought to have some significance. On the 11th we saw for the first time a pair of swans. The same day, on the half-open land between the Petchora and the Zylma, we saw some flocks of wild geese, and, near a pool of water on the ice, half a dozen Siberian herring-gulls (*Larus affinis*, Rheinh.). Their cry seemed

to me to be exactly the same as that of the common and Mediterranean herring-gulls. On the 12th a little detachment of white wagtails came to the village, and we shot six during the day. In each instance they were on the roof of the houses. We also shot a redstart (*Ruticilla phœnicurus*, Linn.) occupying the same position. Another new arrival was the meadow-pipit, of which we shot a solitary example. The shore-larks had already been some days in Ust-Zylma, and by this time were in large and small flocks in the fields on both sides of the town. All those we shot proved to be males. Three or four small hawks, probably merlins, were hovering about, and a snowy owl was brought in to us, apparently just killed. A white-tailed eagle, his white tail looking grey against the snow, was perching on an ice-block in the Petchora, and at a little distance off we could distinctly see a raven picking a bone. Morning and evening we watched the gulls, without being able to get a shot at them. The redpolls had disappeared altogether, and we saw the snow-buntings only once or twice. The signs of coming summer were surrounding us, small flies were on the wing, twice we came upon a tortoiseshell butterfly; we visited the magpie's nest, which we had discovered some days previously in a spruce, and found that it contained seven eggs. But even the approach of summer has its accompanying drawbacks: we had to give up at this time all hope of more winter posts, and two months might elapse before the summer ones would arrive. This break in the communication with civilised Europe is one of the trials to be endured by explorers in these districts.

The little spurt of mild weather, however, turned out to be a delusion. Our six species of summer migrants proved no more reliable than Sancho Panza's solitary

swallow. On the 13th a strong gale from the north brought winter back again, and drove away our newly arrived visitors to more genial latitudes. The snow-buntings and the shore-larks became very wild during this spell of bitter wind ; towards evening it dropped, and when we came upon a flock of the former, they were so tame that they allowed us to walk about within ten and sometimes five yards of them. The flock was composed mostly of females ; one male that we observed amongst them was in more mature plumage than any we had yet seen. Birds of prey appeared in unusual numbers. We saw hen-harriers, both male and female, numerous merlins, which often perched upon the heaps of manure in the fields, and, for the first time, a peregrine falcon. Piottuch was fortunate enough to shoot a fine snowy owl on the goose ground between the Petchora and the Zylma. A hard frost in the night, followed by a cold east wind with bright sunshine, was most unfavourable to the arrival of migratory birds. We were deliberating as to what would be the least unprofitable mode of spending the day, when the Preestáff sent in to inquire if we would join him and the postmaster in an excursion four and twenty miles up the Petchora to shoot geese, and we accepted their invitation gladly. We ordered a horse and sledge, packed up provisions, tents, and wraps, and were soon *en route*.

About halfway we descried two swans on the snow of the Petchora. We started our sledge in pursuit, and approaching the birds in a spiral curve, we came within range, fired, and missed. The birds, very large and very white, flew about a verst across the river, and again alighted. Here they were joined by a third swan. Slowly we crept up again in a spiral curve within range ; this time two rifles fired, and both missed ; a third time

the rifles came within range, but with no better result ; after which the swans flew right away.

We then visited a small lake close to the banks of the Petchora, but it was completely ice-bound, and declared to be *niet dobra* (good for nothing). Finally, we selected a spot where there was open water in two places. Geese flew about in small flocks at intervals during the afternoon, and we all expressed confident hopes of a bag after sunrise. The horses were taken from the sledge, a fire was lit, supper with unlimited tea followed, and was over by eleven. We then selected places supposed to be favourable for the cachets ; at each place a hole was dug in the snow, which was piled up to the height of three or four feet, and planted round with willow twigs. " Cocksure " (the nickname we gave to Piottuch, a bad pun on his name),* who was in high glee, drove across the Petchora with the postmaster, where he was " cocksure " of finding plenty of geese.

After a final cup of tea and a smoke, we separated at one o'clock, each departing to his cachet, to take, if he felt so inclined, a sleep in the snow for a couple of hours. I did not feel sleepy, and was curious to watch a whole night on the banks of the Petchora ; so doffing my malitza, axe in hand, I set to work to turn my cachet into a turreted castle, some six feet high inside. It was a keen frost, and the surface snow was easy to hew out into square blocks, which I joined together with soft snow from below, and soon my castle was one solid mass of frozen snow. The exercise kept me warm. I planted my last piece of willow twig and put on my malitza just as the sun appeared above the horizon, amidst lake and vermilion clouds, behind the steep mudbanks on the other side of the Petchora. Behind me rose a thick

* " Piatookh " is the Russian for a cock.

wood of willow and decayed or decaying birch, a pine showing here and there between. Presently I spied, from between my turrets of snow, a marsh-tit silently searching for food on a willow; I changed one of my cartridges for dust-shot, put my feet into my snow-shoes, sallied forth, and shot it. His mate soon began to call, and in half a minute I secured her also, and returned to my cachet.

An hour passed by; now and then I heard the distant "gag, gag" of the geese, or the wild cry of some far-off swan, but nothing came within range of less than cannon-shot of me. Fourteen large glaucous gulls slowly flew up the Petchora; I watched a pair of swans on the ice through my telescope, and listened to the distant call of some smaller gulls; whilst redpolls and white wagtails often passed over me, all flying up wind. At length I got tired of waiting and watching, and made an excursion on my snow-shoes into the wood. All around was dead silence; nothing was to be heard but the gentle rattling of the east wind amongst the leafless branches of the willows. The wood seemed as empty of bird-life as the desert of Sahara.

I returned to my cachet, and waited and watched with no better result than before. A flock of snow-buntings came fluttering up the Petchora and alighted on some willow-trees; this was interesting. I now made an excursion to the cachet of my companions. I had forgotten to wind my watch, and made this an excuse for my visit. Halfway to it, I came upon a small flock of reed-buntings amongst some willows, and missed a shot at one of them. My companion had stuck heroically to his cachet, but had had no better luck than mine. As we were chatting, we heard the note of a bird, which I took to be a redstart.

I followed the sound to some distance, but could not overtake the bird on my snow-shoes. Setting out to return to my cachet, I was interrupted by a flock of reed-buntings; I got a shot at one, but the cap missing fire, away they flew. I was returning disconsolately by the side of a thick but narrow plantation, when I heard a "gag, gag" through the trees, and descried seven geese, apparently flying straight for my companion's cachet; and on returning I learnt that he had brought down a bean-goose.

On my way back to my cachet I met another party of reed-buntings, one of which I bagged; then I sat in my hiding-place for an hour, waiting for geese that never came within range. At eight I found I had taken a wink of sleep. I could stand it no longer, so set off in search of my companions, and bagging another reed-bunting and wagtail on my way, we returned together to our encampment, where we soon had the kettle boiling with *tchai*.

The postmaster and "Cocksure" turned up as we were breakfasting, and reported a blank night. The Preestáff, we found afterwards, had fared no better. Deciding that we had had enough of this wild-goose chase we harnessed our sledges and returned home in a steady rain. Our horse was done up, and we were six hours on the road, through four of which we slept soundly, waking up just in time to bag a score of shore-larks.

Notwithstanding its inglorious results, we enjoyed our trip as a novelty, and had many hearty laughs over divers "spills" out of and over the sledge; but as ours was the only one that brought home a goose, the best of the laugh was on our side. We had, moreover, bagged a new migrant, and "Cocksure" had seen a black wood-pecker and a common snipe.



THE BANKS OF THE ZYLMA

CHAPTER X.

THE BREAK-UP OF THE ICE.

Gulls—Species new to Europe—Fresh Arrivals—Duck-shooting—Bird-life in the Forest—Gulls perching on Trees—Break-up of the Ice on the Zylma—On the wrong Bank of the River—Dragging the Boats across the Ice—Final break-up of the Ice on the Petchora.

THE same evening, as we sat at the window of our rooms writing up our journals, and now and then looking up to glance through the rain at the ever-impressive scene before us, we suddenly descried upon the ice a flock of, perhaps, 200 gulls. In the twinkle of an eye we had donned our indiarubber boots and were wading through the streets of Ust-Zylma. As we neared the birds we made sure, from their note, that the larger number of them were the common gull, with possibly a dozen herring-gulls among them. We discharged four cartridges of our goose-shot into them. Our broadside,

fired from a distance, left one dead and one wounded on the field. The smaller bird was undoubtedly the common gull, but it was not at first so easy to determine to what species the larger gull belonged. The colour of the mantle was intermediate between that of the lesser black-backed gull and the Mediterranean herring-gull, but the wing pattern resembled that of the latter species. Upon our return home, however, we cleared up the difficulties surrounding our bird, and finding that it had no colloquial name in our language we ventured to christen it the Siberian herring-gull. The species was not new to science, but we may claim to have been the first to add it to the list of European birds.

Another species new to our list was the golden plover, which also arrived in flocks. These birds were special objects of our attention, partly because they were a valuable addition to our larder, and still more so because we were anxiously on the look-out for the arrival of the grey plover, the eggs of which were one of the possible prizes which we hoped to obtain. All our efforts to obtain even a glimpse of the latter species on migration proved, however, in vain. As we subsequently met with them on the tundra, we can only suppose that they migrate to their breeding-quarters by a different route, probably following the coast-line. If they do fly across country, they must travel at such a high elevation that they are rarely observed inland.

Wild geese and swans increased in numbers daily, and about this time flocks of wild ducks began to fly up the Petchora. So far as we could judge, they seemed to be principally pintail ducks, though we succeeded in shooting a teal.

Pipits also began to arrive in great numbers. They were wild and difficult to shoot, apparently all flying up

wind; evidently eager to continue their journey and rarely alighting on the ground. Both species were represented, but they appeared to migrate in separate flocks, and the red-throated pipit was much more abundant than the meadow-pipit. We occasionally heard both species singing, but they were by no means in full song, being evidently intent on migration.

Fieldfares and redwings also arrived and soon became very numerous; and among the flocks of shore-larks which continued to pass through the district a few Lapland buntings were generally to be seen.

The flocks of shore-larks had by this time become more numerous, and consisted of males and females in nearly equal numbers. These birds were very tame, frequenting for the most part the fields at the back of the village, feeding and running about in the stubble, and occasionally attempting to sing on the ground. The snow-buntings and redpolls had disappeared, and in the streets their place appeared to be taken by white wagtails. Fresh flocks of these charming little birds in full breeding plumage arrived daily; and in a large flock consisting of from thirty to forty birds we noticed an Arctic yellow wagtail (*Motacilla borealis*).

Three whimbrels passed over us. My companion whistled to them, so cleverly imitating their note that they approached within fifty yards of him, when he shot them. A peasant also brought us a rook, the only one we saw during our journey. At this time we ascertained positively the presence of a bird which we had long suspected to be on the roof of the Preestáff's house next door to ours—a no less important bird than the common sparrow. We shot two males and three females. This is an extraordinary instance of the extreme localness of birds. We never by any chance

saw these common sparrows among the tree-sparrows in our yard, nor had we any reason to think that they were to be found elsewhere in the town.

On the 19th we received an invitation from our friends who had assisted us in our late wild-geese chase, to join them in a duck-hunt. M. Znaminski had a *maisonnette* a few versts up the Zylma, which he turned to use on such occasions of sport. He and M. Sacharoff were already there. We accepted the invitation, and after sledging across the Petchora, and perhaps four versts up the Zylma, we reached our host's quarters at about 3 A.M. We had made a somewhat circuitous road up the Zylma, for there were many ugly-looking places in the ice which had to be avoided. On arriving we dismissed our yemschiks, who returned to Ust-Zylma with orders to come with five sledges to fetch our whole party back on the following day at noon.

The shooting-ground was a flat piece of country lying between the Petchora and the Zylma. It bore traces of its annual submersion for a week or two under the waters of the great river when it breaks up. The larger part was covered with a forest of birch, willow, and alder; many of the trees were dead, perhaps in consequence of the flood, and drift-wood was scattered or accumulated in piles all around.

It was heavy work walking in these woods, or rather wading through the water and snow in them. Every now and then we came to a lake or an open swamp, or found ourselves on the banks of a *kuria* or creek where the snow had melted, and the walking was easier. Few or no trees grew by the side of these kurias; the banks of the Zylma also were bare, the forests near the rivers being shorn off by the ice, which sometimes mows down the stoutest trees as a man mows grass with a scythe. On the low ground between the Zylma and the forest

land, pollard willows grew, many of which had been knocked down by the floating blocks of ice.

It would be impossible to estimate the number of ducks we saw. They seemed to fly over us by hundreds and thousands. Small and large flocks continually passed us on the wing. In the evening the shores of the Zylma and a piece of open water opposite were almost black with them; sometimes they filled the air like a swarm of bees. They were very wild, but the old pollard willows gave excellent opportunities for concealment, and a good shot would have made a heavy bag in a short time. My companion shot seven in about an hour: six pintails and one teal. Nearly all these ducks were pintails; we identified hundreds through our glasses, and saw only a few teal.

My companion identified a small flock of shovellers, one of which flew quite close to him. He also distinctly made out a pair of golden-eyes, which came within shot while we were dining. Through the glass he also recognised a wigeon. We also saw a few geese and swans. We met with the greenshank more than once, and had a fine view of a peregrine falcon. A small flock of shore-larks and a few red-throated pipits, too busy migrating to stop to be shot, nearly complete the list of birds we saw in the open country.

I spent most of my time in the woods. Three weeks previously we had made a long round through them on our snow-shoes and found them deserted; not a bird to be seen but a solitary marsh-tit or an occasional "hoodie." Now, in the early morning, these woods were full of life and abounded in interest for the ornithologist. In the afternoon they were more quiet, and the interest was not sufficient to repay the toil of wading through water, snow, mud, and drift-wood. The commonest and noisiest

bird was the redpoll. Next to it, strange to say, was the meadow-pipit. This bird behaved in every way like the tree-pipit, being occasionally seen on the ground, but mostly up in the trees; sometimes singing on the ground, sometimes when on the wing, but oftener in the branches overhead.

We had just decided that these birds were, or ought to be, tree-pipits, when we shot down half a dozen from among the branches, and finally satisfied ourselves that they were the meadow-pipit. Our astonishment was still greater, however, when we beheld three gulls quietly perched upon the top of a tall birch in the wood. We watched them for some time, examining them through our glasses; at last they rose and flew over our heads, and by their cry we recognised them to be the familiar *Larus canus*. Shortly afterwards we shot one.

Fieldfares and redwings were sprinkled through the woods; we could almost always hear the song of the latter bird, as well as the loose cry of the former, and its starling-like note before alighting. My companions saw a couple of redstarts chasing each other, and I followed a willow-wren, which was in full song, for at least an hour, but did not succeed in shooting it. Many white wagtails flew past, and reed-buntings were also common. Where the birches were largest we heard the tapping of woodpeckers. We shot a pair of Siberian lesser spotted woodpeckers (*P. pipra*, Pall.); and of a pair of three-toed woodpeckers that we saw we succeeded in shooting the male. We also shot a pair of marsh-tits.

When I returned on the morning of the 20th after a five hours' solitary ramble in the woods, I found the sportsmen still fast asleep. My entrance roused them, and we soon proceeded to make tea. We were sitting down to our pipes after our late breakfast, when we were

startled by the appearance of M. Znaminski, who had just gone out, and now came hurrying back in a state of great excitement, beckoning to us to come.

We seized our guns, expecting to see some great or rare bird ; we rushed to the door, and there we paused and stood still, gazing before us in mute astonishment. Our road was in movement, and was going to Ust-Zylma at the rate of two or three miles an hour. There was no doubt about it, the Zylma was breaking up. The scene was wild and picturesque. In a few hours it was very impressive. The ice had broken into the Petchora at the mouth of the Zylma. Here and there piles of it lay upon the banks. Finally it had blocked, and gradually the Zylma became a confused mass of jammed ice and tree-trunks, while an occasional ice-floe, thicker than the rest, formed where the water had been stiller and deeper, rising above the level. While the ice moved the sound was like that of a waterfall : as it cracked on the Petchora, the noise was as that of rumbling thunder. The water was rapidly rising, and our predicament was serious. It was obvious that no horses could reach us. The Russians, who at first did not realise the situation, soon began to look grave. We took counsel together, and we decided to transport ourselves and our baggage to some houses that stood on higher ground, halfway towards the mouth of the Zylma. It took us some hours to do this. We were beginning to make preparations for a week's camping in the midst of floods, when towards four o'clock we discerned in the distance the figures of our yemschiks. They were coming, but they were coming without horses. When they reached us we learned from them that the ice had broken up on both shores of the Petchora. They had come across in a boat, which they had dragged for a couple of versts in a sledge across the central field

of ice, being forced to leave it on the shore five or six miles off. We determined to put the bulk of our baggage under the charge of two yemschiks and to return with the other men in the boat.

We felt rather nervous as we entered the boats and put to sea on the open water across which we had sledged so recently, and we had some little difficulty in finding a solid piece of ice on which to land. The central ice of the Petchora was evidently on the eve of breaking up. Every nerve was strained to drag the boats across the mile of ice, and relaunch them on the safe side of the river without a moment's unnecessary loss of time. It was past midnight, and at any moment the crash might come. The ice was obviously under great pressure. Cracks running for miles with a sound like distant thunder warned us that a mighty power was all but upon us, a force which seemed for the moment to impress the mind with a greater sense of power than even the crushing weight of water at Niagara, a force which breaks up ice more than a mile wide, at least three feet thick, and weighted with another three feet of snow, at the rate of 100 miles in the twenty-four hours. It was eight o'clock in the morning when we landed in Ust-Zylma, and heartily thankful we were to find ourselves once more safe in our quarters. We were hungry and dead tired after the excitement was over, and after a hasty breakfast we were glad to turn into our hammocks. We slept for a couple of hours, and then, looking out of the window, we found the crash had come; the mighty river Petchora was a field of pack-ice and ice-floes, marching past towards the sea at the rate of six miles an hour. We ran out on to the banks to find half the inhabitants of Ust-Zylma watching the impressive scene.



DIFFICULTIES WITH SNOW-SHOES

CHAPTER XI.

PEASANT LIFE IN UST-ZYLMA.

Religious Processions—Costumes of the Peasants—A Russian Holiday—Drunkenness—Prejudices of the Old Believers—Field Work—House-building—New Birds—The Siberian Chiffchaff—Prices of Provisions—Arrival of Waders.

THE 21st of May was St. Michael's Day, one of the greatest holidays in this country. A long procession of Old Believers, consisting mostly of women and children carrying banners and pictures, wended its way through the town. The women were dressed in their best, and decked with all the jewellery that they possessed, some of which was very ancient and valuable. Many of the dresses, too, were antique—heirlooms handed down from mother to daughter. Some of these were gorgeous, none were vulgar, the colours being always sober, rich and

clear. The wealthier peasants' wives and daughters were arrayed in velvet and gold, silk and satin ; those of the poorer in linen and cotton, almost entirely of Russian manufacture. The women, as a rule, wore the *rubakha*, which is simply a skirt put over the fur *malitza*, coming down to within a few inches of the ground ; their *chaussures* consisted of high boots, and their head-dress of an orientally coloured handkerchief, tied behind. We had already noticed this Eastern taste for colour among the peasantry. A few days previously an imposing wedding procession had passed our window. The larger number of the party were on horseback, two on each horse. All were brightly dressed : the men wore knots of ribbons on their shoulders ; the women, gaily apparelled, had on various and curious head-dresses, ornamented with gold braid. Yet, for all their brilliancy, the colours did not look garish, a little touch of grey being always introduced to subdue the effect.

On St. Michael's Day it is customary to make presents to the Church. The peasants brought various sorts of offerings, cows, sheep, gloves, ribbons, etc., which were afterwards sold by auction. Then the afternoon was spent in merry-making, and, as is too often the case on a Russian holiday, the revellers all got more or less drunk.

We found the condition of things wonderfully altered at Ust-Zylma by the breaking up of the ice of the Zylma and the Pizhma. Despite the map, the latter river flows into the Petchora, and is not a tributary of the Zylma. The thaw of the two rivers together had been too much for the Petchora. The ice was broken up for three or four versts on either side of the town ; most of it had disappeared, perhaps beneath the other ice. Already several boats were out, and the men were fishing in open water. The breaking-up of the ice went on steadily for

days. By the 25th of May the great river was entirely free. Summer had come as suddenly as usual, and the people were hard at work; the women and children carting manure on the land, using sledges, although the snow had disappeared except where it lay in drifts; the men breaking up the ground with an antediluvian-looking plough, sowing corn broadcast, or harrowing in the seed with a wooden-toothed harrow.

A good deal of building was also going on. The year before the peasants had made large earnings out of the fisheries, and were now spending larger sums than usual in erecting houses. We found the demand for labour was great, and wages were high. Few men could be got under 10s. per week. We spent our days, as usual, on the look-out for the arrival of new migratory birds, in watching the habits of those at hand, and in adding to our collection. We saw no snow-buntings after the 18th, and the merlins disappeared with them. Nor did we see any gulls after the 21st. The shore-larks and the Lapland buntings were also growing scarce. Occasionally small flocks of them would appear in the fields behind the house, sometimes so busy feeding as to allow us to approach very near them.

On the 21st of May we were surprised to find a pair of wheatears. In England they are the earliest birds of passage to arrive in spring, but of course they winter farther south than the snow-buntings and shore-larks, and we might reasonably expect them to arrive later in such northerly breeding-grounds.

On the 22nd we added another familiar British migrant to our list, the tree-pipit, a bird which usually arrives rather late with us. A more important addition to our list was, however, the Siberian chiffchaff (*Phylloscopus tristis*, Blyth), a little warbler which frequented

the low willows, uttering a plaintive call, a single note repeated at intervals. We were under the impression that we were adding a new bird to the European list, but we afterwards found that our discovery had been forestalled by M. Meves of Stockholm, who had found it some years previously in the government of Perm. A third specimen which we added to our list was a skylark. On our return home we found that Znaminski had also been out shooting, and had bagged some very interesting birds for us—five green wagtails, three meadow-pipits, two red-throated pipits, and a stonechat, the latter not the European but the Indian species (*Pratincola maura*, Pall.), a new and interesting addition to the European fauna. Znaminski's hunting-ground had been a marshy piece of land just behind the town, sprinkled over with small spruce firs, bushes of stunted birch, juniper, and dwarf rhododendrons (*Ledum palustre*). To this spot we betook ourselves the next morning, and found it to be a favourite resting-place of migratory birds. We shot a red-throated pipit on the ground, solitary among a company of meadow-pipits. We secured a green wagtail and a short-eared owl. In this favoured spot the willow-warblers congregated and were in full song; the blue-throated warblers were also there, but their song was not so full; it resembled sometimes the warble of the pipit and sometimes that of the whitethroat. We secured, besides, a brace of golden plover and a reed-bunting.

During the afternoon we visited the skirts of the pine-forest in the valley, and there I shot two male wheatears. The day before, a male and female wheatear had flown past me and perched on the summit of a tall pine. Out of a spruce fir in the wood we now heard a loud, clear "chiff-cheff-chaff." We thought it was the cry of the chiffchaff; but we failed to find the bird.

Shortly after we heard a warbler singing. For a moment we fancied it was a willow-wren, but before the song was half finished we felt convinced that we were unacquainted with it. It was not unlike the "chiff-cheff-chaff" of our bird when it makes the third variation it occasionally does in its notes, but these notes were more musical, repeated rapidly without intermission, running into a song. This bird was also perching in a spruce fir, but a long shot brought it down. It proved to be the Siberian chiffchaff. For days afterwards we heard several of these birds singing, and, on further study of their note, we found it very distinct from that of the chiffchaff. Our bird's note is not badly represented by its name, with an equal accent on both syllables. The note of the Siberian chiffchaff is better represented by the word "chivit," with a decided accent on the first syllable. It is seldom uttered singly, but generally repeated "chiv-it, chiv-et," or oftener "chivit," followed by two notes of its song. The bird seemed very partial to the spruce fir, perching on its topmost bough. In comparing its habits and those of the willow-warbler, we found the Siberian chiffchaff easy to shoot, while the latter was as wild as possible.

Another song that greatly roused our curiosity was a melodious whistle, reminding us both of the song of the blackbird and of the redwing. We expected the songster would turn out to be some rare Siberian thrush. The bird was by no means shy, so we had no difficulty in following its song, and in approaching within easy shot, as it perched sometimes on the top, sometimes near the summit of a spruce fir. Once we observed it hopping on the ground. We obtained six specimens, and were somewhat disappointed to find such melodious and thrush-like notes proceeded from the pine-grosbeak.

It is a curious fact that the day following, on returning to the spot where we had seen and shot so many various birds, we found it deserted; there was nothing but willow-warblers on it. Red-throated pipits passed over singly and in flocks, but none seemed disposed to alight. In a plantation hard by we heard a chaffinch sing, but we did not get a shot at it. We fell in there with a small flock of bramblings, and secured a male that was not yet in full breeding plumage. On the following day a thick mist came up the Petchora, which cleared up about noon, and was followed by a north-west breeze with gleams of sunshine and threatenings of rain. Birds were few and sang little, the note of the warblers being almost the only one we heard. We had an excellent opportunity of identifying a white-tailed eagle, which came almost within shot of us. Two cranes (*Grus communis*, Bechst.) passed over us, and I recognised them as birds I had seen two or three days before. By this time all the hooded crows and magpies had gone into the woods to breed, and the town was deserted by them. During the week there had apparently been an arrival of house-sparrows in Ust-Zylma, for they abounded in Znaminski's yard. Strangely enough, we could not meet with any in other parts of the town.

On the 26th the weather changed. A cold north-east wind blew, and it was a day unpropitious for bird-shooting. So little did we anticipate meeting with any, that we spent the morning in buying provisions for our journey. It may be useful to record the prices we paid :

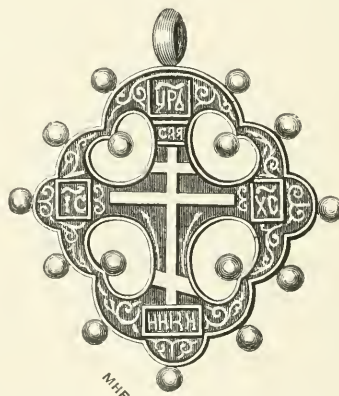
Salt beef	1.70 rouble	per poud	(1 $\frac{1}{4}$ d. per lb.).
Butter	6.50 roubles	„	(4 $\frac{3}{4}$ d. „).
Tea	2 „	per lb.	(5s. „).
Coffee	.55 rouble	„	(1s. 4d. „).

We also bought a *nvelma*, or white salmon, for our

present use. In its stomach were several small fishes. It weighed 15 lb., and cost 10 kopecks per lb. We were told that later the price would be 5 kopecks per lb. This fish sometimes reaches the weight of 60 lb. We found it very nice eating, but failed to recognise its boasted superiority to salmon. We acknowledge, however, that the cooking may have been in fault.

In the afternoon we went out in the cold wind, not expecting to shoot anything; but to our astonishment we found a number of new birds in the town itself. We secured a wood-sandpiper out of a flock of four, and a Temminck's stint, of which there were several. We saw a common swallow twice, and shot a pair of ringed plovers. We had also an excellent view of two oystercatchers. All these were new arrivals. Many green wagtails were to be seen, and we shot four males and two females. In the village we met a shore-lark, the first we had seen for many days in the streets.

The unfavourable-looking day proved one of the most interesting we had yet had.



OLD RUSSIAN SILVER CROSS



WILLOW-GROUSE

CHAPTER XII.

THE PETCHORA IN FLOOD.

Samoyede Names—The Blue-throated Warbler—Toads—Birds Resting on Migration—Sparrow-hawk—The Petchora Free from Ice—A New Song—Ceremony of Blessing the Steamer—Rambles in the Woods—Appearance of the Mosquitoes.

WHILST we were waiting for the flood in the Petchora to subside sufficiently to make it safe for us to proceed down the river in a small boat, we met with a Samoyede somewhat more intelligent than usual, and from him we were glad to learn something more concerning the names of various articles connected with reindeer and sledging which we had collected. It is somewhat difficult to

express the exact sound in English characters, since almost every Samoyede word is pronounced either nasally or gutturally.

The Samoyede for sledge is *khăn*, the *kh* pronounced like *ch* in German, and the *n* like *n* in Spanish.

A reindeer is *tū*, the *u* like the German *ü*. There are three sorts of reindeer: *khōra-tū*, the entire male reindeer; *khăb-tū*, the cut reindeer; and *yăh-tū*, the female reindeer. These adjectives are also used in reference to horses and other cattle.

The piece of leather over the body of the animal which takes the place of our saddle is called the *yōde'-yănă*. The narrower band round the neck, in place of the collar, is the *pōde'-yūr*. The single trace attached to the lower part of the collar, and passing between the legs under the body, is called the *să*. The blind pulley, or pulley-block without a pulley through which it passes, is the *pyat'-say'*. The halter, or bridle without a bit, is the *syăhn*. The halter of the leading reindeer is the *nyes'-măn dye syăhn*. The halter of the other reindeer is the *pyelay' syăhn*. The rein with which the leading reindeer is guided is the *mělănye*. The hook on the side of the saddle-band on which the rein rests is the *khălsōōlă*. The swivel or universal joint by which the rein is attached to the halter is the *siir'nye*. A button which serves to fasten the trace to the collar, or the belly-band to the saddle, is the *păysik*. The long pole with which the reindeer are driven is the *tōōr*, and the bone or ivory knob at the end of it the *tōōr-măhl*. The rein connecting the leading reindeer with the one next to it is the *poo-inye*. A lasso is called a *teēn-zăy'*, and the bone noose through which it runs is the *sah'mîk*. The tent or choom is the *myah'-kăn*, and a dog is called a *vōïnyekō*.

The Samoyede who gave us this information was one

of the poorer men of his tribe. All the richer families had migrated north with their herds of reindeer before the snow had melted. The poorer families remained behind, hanging on to the skirts of the Russians, helping them with their fishing, and receiving for pay such food as their employers chose to give them. One cannot help pitying these poor people. Their nation is gradually dying out. Like the North American Indians, they are doomed to destruction, for, like them, they cannot refuse spirits. In the struggle for existence they have no chance with the cunning Russian, who in all matters of business has no more conscience than a Greek or a Jew.

During this time the birds were few. On the 27th we took a walk in the forest, and the only ones that were singing were the willow-warblers, an occasional pine-grosbeak breaking in now and then. We secured, however, a pair of bramblings out of a flock. We shot a blue-throated warbler, a yellow-hammer, a female reed-bunting, a Siberian jay, a stonechat, and a red-throated pipit, and out of a number we brought down a brace of golden plover. We saw a solitary shore-lark, a gull (apparently the common species), and a fine male bullfinch. In the town we got a couple of wood-sandpipers; then the green wagtails were common, and we came upon a large party of Lapland buntings, all apparently females. In the evening the wind dropped and a frost set in. At midnight, when we went to bed, the thermometer marked only 30°. The next day was bright, but cold, with a light north wind blowing. We went for another long tramp through the pine-woods, but very few birds were to be seen. We shot a pair of grosbeaks, a fieldfare, and a blue-throated warbler (*Cyanecula suecica*, Linn.). We saw a Siberian jay, for whose nest we had a long search,

which resulted in our finding two old ones. Whether these were nests of the Siberian jay or of the pine-grosbeak we could not, however, determine. Twice we heard the note of the Siberian chiffchaff, but we could not see or get a shot at the birds.

The smart frost returned during the night. In the morning, however, the wind veered round to the east, and it was warm; in the afternoon it was very hot. Five hours hard walking through the woods in the early morning resulted in nothing. I did not bring down a single bird. My companion shot two blue-throated warblers; they had now grown as common as the willow-warbler. The blue-throated warbler has been not inaptly called the Swedish mocking-bird. Sometimes it is shy and retiring, seeking food in the densest thickets and bushes, haunting the marshy grounds sprinkled over with small spruce fir, dwarf willows and juniper; but when newly arrived from its winter home, and beginning to sing, it is an easy bird to see, and not difficult to shoot. On its first arrival it often warbles in an undertone so low that you fancy the sound must be muffled by the thick tangle of branches in which you think the bird is concealed, while all the time it is perched on high upon the topmost spray of a young fir, this very conspicuousness causing him to escape detection for the moment. His first attempts at singing are harsh and grating, like the notes of the sedge-warbler, or the still harsher ones of the whitethroat; these are followed by several variations in a louder and rather more melodious tone, repeated over and over again, somewhat in the fashion of a song-thrush. After this you might fancy the little songster was trying to mimic the various alarm-notes of all the birds he can remember—the “chiz-zit” of the wagtail, the “tip-tip-tip” of the blackbird, and especially the

“whit-whit” of the chaffinch. As he improves in voice, he sings louder and longer, until at last he almost approaches the nightingale in the richness of the melody he pours forth. Sometimes he will sing as he flies upward, descending with expanded wings and tail, to alight on the highest bough of some low tree, almost exactly as the tree-pipit does. When the females have arrived, there comes at the end of his song the most metallic note I have ever heard a bird utter. It is a sort of “ting-ting,” resembling the sound produced by the hitting of a suspended bar of steel with another piece of the same metal.

Our afternoon walk was more fruitful of result than that of the morning. I had followed for some time the shore of the overflowing Petchora, when, after having bagged a brace of wood-sandpipers and a ring-dotterel, I crossed a sandbank to a marshy pool. The muffled croak of numerous toads or frogs kept up a sound resembling that of gurgling water. On my approach the whole tribe disappeared and hid in the mud. After I had waited a while, three slowly put up their noses above the surface. I fired ineffectually upon the reptiles, but I started seven or eight sandpipers and a red-throated pipit, upon which I set off at once in pursuit of the last bird. I presently found myself on a marshy piece of ground, covered with grassy hillocks, in the narrow trenches between which pipits were sitting. As I walked on they rose at my feet on all sides, and I soon had half a dozen within shot. I brought down a bird with each barrel, reloaded, and, as I walked up to my victims, there rose between me and them two or three pipits, who evidently preferred being shot to being trodden upon. Unfortunately I had but two cartridges left, so, bringing down another brace, I went back to our quarters

for more ammunition. On returning to the open marshy ground, I found the birds still there, and very soon secured another half-dozen. My last shot was a double one. As I was getting over the soil upon which some pipits had been sitting, a hawk rushed past clutching a bird in its claws. A dozen wagtails set off after it in vociferous pursuit. I followed more quietly, and soon had the satisfaction of laying a male sparrow-hawk upon its back, with a half-eaten sparrow beside it. Some wagtails remained perched upon the railing behind which the hawk had retired to finish the devouring of its prey. They uttered cries, which might be interpreted either as doubting the supposed escape of their foe, or as a pæan of rejoicing over its downfall. The sight of their enemy lying motionless on its back rendered them deaf to the sound of my gun and blind to my presence. They remained undismayed within a few yards of me, not stirring until I had packed away the hawk. At this juncture my companion came up. He had been more fortunate than I in his raid upon the reptiles, and had secured a couple, which we found to be a species of toad, with whitish and black spots and stripes on the back. At this pool I now secured a Temminck's stint, and my companion another pipit, making the eleventh shot that day. For weeks we had never succeeded in shooting more than one out of a flock. They had abounded during the last fortnight in the fields and in the open ground about the town. We had seen hundreds, and yet, during those two weeks, we had not secured more than five males and one female; now in a couple of hours we had bagged ten males and one female out of a single flock. We had found them wild, and seldom disposed to settle on the ground. It was curious that these pipits should have been so different from the

others ; but what was still more curious and interesting was their behaviour during the raid we made upon them. After repeated shots, bringing down several of their numbers, the remainder would get up, settle on the railings, on the adjoining house-roof, or perch upon the slender branches of a willow-tree hard by.

The same day I saw again the barn-swallow, which seemed to be the only representative of its species at Ust-Zylma. I watched a flock of shore-larks and Lapland buntings on the stubble. As a rule, they ran along the ground like the wagtails, but I also marked both birds hopping for some distance.

For the first time, on Sunday, 30th of May, the Petchora was free from ice. The steady march-past of the frozen blocks had lasted just one week. The wind that day was warm, blowing from the south, but the sky was cloudy. A peasant brought us three young Siberian jays, and another rowed across the river, the bearer of a ruff, the first we had yet seen ; and of some eggs—six duck's eggs, doubtless those of the pintail, and four of the hooded crow. The following day the warm south wind continued, with sunshine and cloud. We took a long round in the valley, where a few days before we had seen so many Siberian chiffchaffs. The blue-throated warblers were singing lustily, but we failed to hear or see the bird we were specially in search of. As we were making our way home, through a swamp thickly studded over with willows, birch, and fir, I heard a song quite new to me. It closely resembled that of the yellow-hammer, whose note is popularly supposed to say " Lit, lit, lit, little bread and no cheese." This bird cried " Lit, lit, lit, in as tay." I shot the strange songster, and brought down my first little bunting (*Emberiza pusilla*, Pall.). Twice during the day we visited the marshy spot, upon which forty-eight

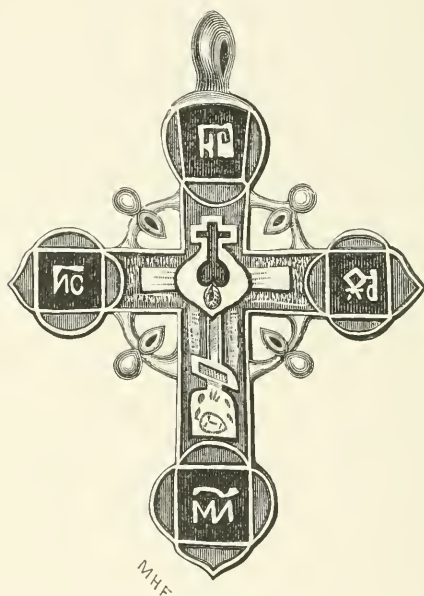
hours previously the red-throated pipits had swarmed, but we found it utterly deserted. The flock was evidently resting after a long stage of migration, and had now resumed its northward progress.

The next day a visit to the same spot brought the same result; not a red-throated pipit was to be seen upon it. On the 1st of June I saw a common scoter for the first time, flying down the Petchora close past Sideroff's steamer. I was on deck at the time, one of a crowd waiting to witness the ceremony of sprinkling the vessel with holy water ere it set out on its summer voyage. The ship had arrived the evening before from its winter quarters in the bay behind Habariki. The ceremony was effective. Flags were flying, cannons firing, guests assembled; a breakfast was prepared, then came the procession of robed priests, candles burning and censers swinging; prayers were chanted, the crucifix was kissed, and then the sprinkling began. Everybody and everything was sprinkled with holy water from a rod, apparently made of fine gilt wire. The paddle-boxes were sprinkled, the deck was sprinkled fore and aft, the cabins were sprinkled, the sailors were sprinkled; the captain and the engineer each received a whisk from the brush, which made them wince, for at that moment a detachment of ice, probably from the Ussa, was passing down the river, chilling the water not a little. Then all was over except the breakfast, when a practical joke was played upon the guests. A course of bear-flesh was served up incognito, so deliciously cooked that all ate of it with gusto, suspecting nothing. Our amiable friend, the wife of the public prosecutor, alone suspected, but wisely kept her counsel.

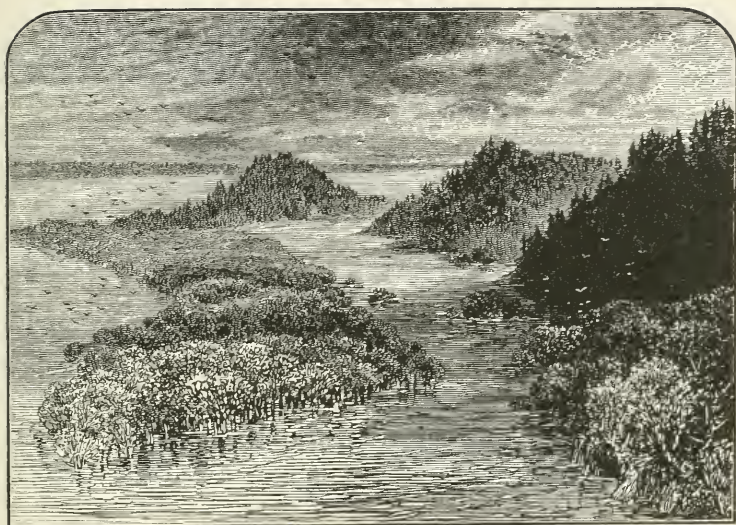
After our dissipation we spent the evening packing skins, and retired to our hammocks about midnight; but

whether owing to Captain Arendt's hospitality or to the effect of the arsenic in the skins, we could not sleep. At three o'clock, finding that the sun had been up some time, we bethought ourselves that we could not do better than follow his example, so we accordingly arose, and shouldering our guns, marched off to the Siberian chiffchaff valley. We chose good positions in the wood, and disposed ourselves to watch and wait. Before long I heard the distant *chivit* of the much longed-for bird, rising from the bottom of the valley. I pressed forward cautiously through the trees, and caught sight of the little warbler's white throat glistening in the sunshine, as it uttered its unpretentious song, perched on the top of a pine. I could not approach it nearer than within sixty yards without making a considerable *détour* to avoid the stream with its high mud walls, crumbling down on all sides, so I risked a shot. It was too far and missed. Meanwhile a second Siberian chiffchaff set up its *chivit*. I started off in pursuit of the cry and soon came within shot of the bird, perched, as usual, on the summit of a spruce fir. I fired, ran to the tree, searched diligently through the moss at the foot, but found nothing. Whistling for my companion to come up, I began to run the tree over with my telescope, when, to my great delight, I caught sight of my bird lying dead on a spray within six inches of the top. We saw no more of these birds during the morning, but shot two wheatears, which had by this time grown common, a pair of blue-throated warblers and a willow-wren. Nearly all the green wagtails which we saw had more or less brown on the breast; they were doubtless last year's birds which had not yet assumed the full mature plumage. On our return a peasant brought us three young ravens and some duck's eggs, probably pintail's. That day I

recorded in my journal, with many groans, the first appearance of the mosquitoes. Horrid-looking beasts, with bodies a third of an inch long, monsters, the *Culex damnabilis* of Rae, with proboscis "*infernali veneno munita*." I foresaw that we should have opportunities enough to study the natural history of these bloodthirsty creatures to our hearts' discontent.



OLD RUSSIAN SILVER CROSS



THE FLOODED BANKS OF THE RIVER

CHAPTER XIII.

A TRIP TO HABARIKI.

Trip to Habariki—Forest Scenery—Tarns in the Woods—Changeable Weather—New Birds identified in the Forests—Golden Eagle—Osprey—Hobby—Cuckoo—Yellow-headed Wagtail—Bohemian Waxwing—Great Snipe—Terek Sandpiper—Goosander—Smew—Black-throated Diver.

WE were fast asleep the next evening when we were roused up by Captain Engel's invitation to go down with him by the steamer to Habariki to stay there three days. We had barely time to dress and fill our pockets with cartridges. The current of the river was in our favour ; it was running at the rate of four miles an hour, and we accomplished the twenty-seven miles in two hours. Arrived at Habariki we scarcely recognised the place again. The snow had disappeared, all but a patch or two on the Timanski hills, fifty miles off. The Petchora, freed from ice, had risen some twenty feet or more, and

had flooded the island in front of the village, the willows and pine-tree tops being just visible above the surface. Inland, half the country at least was under water, a vast network of lakes and swamps with forest between. In some places the skirts themselves of the forest were flooded. As we had not brought our wading-boots we had to confine our explorations to the woods. These proved an inexhaustible source of interest to us, and one in no wise lacking in variety. There was much beauty in these woods. Under foot spread a carpet of soft green moss and lichens, the thick moss predominating in the older and thicker parts of the forest, while the reindeer-moss and the many-coloured lichens abounded in the younger and more open woods. Stray shrubs of arbutus and rhododendron, bushes of bilberry, crowberry, cranberry, the fruit of which was preserved by seven months' frost, clumps of carices, and other vegetation decked the shady aisles. The monotony of the great pine forest was varied by the delicate hues of willow and alder thickets, by plantations of young pines and firs, by clumps of tall spruce and haggard old larches, while here and there a fine birch spread abroad its glossy foliage, or a gaunt Scotch fir extended wide its copper-coloured arms. All around lay strewn trunks and branches of timber, fallen or felled, in every stage of decomposition, from the hoary log, moss-covered and turned to tinder, to the newly lopped branches of some lofty forest patriarch, whose magnificent boughs had been wantonly cut up to furnish firewood for Sideroff's steamer. The most curious features in these forests were open and slightly hollow places, like tarns, or half dried-up tarns, the bed carpeted with moss and a network of last year's *Potamogeton*. The shallow places were quite dried up, but the deeper ones had still a lakelet glistening in the centre. These hollows are

doubtless filled with water when the Petchora reaches its highest flood point in June, and many are not yet dried up when an early winter sets in, and the remaining water becomes ice-bound.

Our three days stay at Habariki was marked by very variable weather. Thursday was calm and warm, with bright sunshine. Friday was bitterly cold, with a strong gale from the north, and only occasional gleams of sunshine, and slight storms of rain and snow. On Saturday morning the gale had subsided, and the greater part of the day the sun shone, but a violent hailstorm fell during the afternoon, and in the evening we had a dead calm. Notwithstanding the generally unfavourable weather we saw a vast number of birds, and added to our lists in these three days more than half as many species as we had seen during the whole of our stay at Ust-Zylma.

We saw several eagles, but only one near enough for identification. It showed no traces of white on the tail, and we concluded it might be a golden-eagle or a white-tailed eagle of the first year. We identified an osprey as it flew past us overhead. We fired at it, and it dropped a large bunch of damp moss that it was doubtless carrying for nesting purposes. On a bare larch-trunk towering high above the surrounding wood we could see, about fifteen feet from the top, a large nest, which we presumed was that of this bird.

I rose a dark-winged hawk from the ground, which I have no doubt was a hobby. Some hours later we saw a similar-looking bird, perched high on the naked branch of a dead larch, and a long shot brought it down. It proved a fine male of this species.

Many of the ancient stems of the larches contained old nest-holes of woodpeckers, and the bark of some trees was riddled from top to bottom with small holes, evidently

made by these birds when feeding. One of our sailors shot a male. We saw soon after a pair of three-toed woodpeckers, but did not then succeed in securing either of them. On another occasion we heard the tapping sound of the woodpecker's beak; a tap, then a slight pause, followed by a rapid succession of taps, and, after a second slight pause, a final tap. I imitated the sound as well as I could with a cartridge on the stock of my gun. The bird immediately flew to a dead larch-trunk, close to where we were standing, and perched, its head thrown back listening, some fifty feet from the ground. In this position it fell to my companion's gun. It was a female.

We heard the cuckoo's familiar note repeatedly every day; the first time it was near midnight, soon after our arrival at Habariki.

The hooded crow and magpie were as abundant as usual in this part of Europe. The Siberian jay was very common in the wood, and very noisy; all the more so, perhaps, for the number of young birds among them. I saw on one occasion an old jay feeding a young one. I shot the latter; it was in the full plumage of the first year. The old birds were very tame and easy to secure, for they were in full moult. The body bore no appearance of it, but the wing and tail feathers were "in the pen." The flight of the Siberian jay is noiseless, resembling somewhat that of the owl, sailing with wings and tail expanded before alighting. These birds like ascending from branch to branch, close by the stem of a birch or fir. When they cannot hop from one bough to another they ascend the trunk in the fashion of the woodpecker. This habit we both of us specially noted. We did not hear their song, but they were constantly uttering harsh loud cries, some of which reminded us of those of the peregrine at its nest, while others resembled the scream of the wood-

pecker. During the season of incubation the Siberian jay seemed shy and silent.

A flock of tree-sparrows was always to be seen among the few houses in the village, sometimes perched on the railings, at other times gathered in a bunch on the roofs. We saw no evidence of their having begun to think about building. The pine-grosbeak was one of the commonest, if not the commonest bird at Habariki, and the mealy redpoll also was common. The little bunting was not rare, but its shy and retiring habits often caused us to overlook it. We rarely heard it sing, yet frequently noticed its quiet call-note. We also often came upon it feeding on the ground near the swampy edge of the forest tarns, in company with yellow wagtails, fieldfares, and bramblings. We saw several reed-buntings, and shot a male. They usually frequented the willows on the edges of the marshes and lakes. The green wagtail was common, and still kept together in flocks ; we constantly saw them in trees.

The yellow-headed wagtail (*Motacilla citreola*) was a bird we had neither of us met with before. The alighting of a small party of five on an alder-bush surprised us. We secured a male, but the remainder disappeared among some alders and willows growing on an impassable piece of flooded land close to the Petchora, which was also full of floating driftwood. So, unfortunately, we saw them no more.

We noticed a few white wagtails, principally near the village. Fieldfares were numerous, sometimes in flocks, generally in pairs. They scarcely seemed to have yet begun to breed. We had two nests brought us, however, each containing one egg. We found plenty of old isolated nests, but no traces of colonies. The fieldfares were singing far more in the woods about Habariki

than I had heard them doing during the breeding season in Norway.

The redwing was decidedly commoner than the fieldfare, and its rich wild notes constantly resounded in all parts of the forest. Its usually plaintive whistle was only occasionally heard, the note which it more frequently uttered resembled rather that of the song-thrush, but was very short. We shot one, to make sure that it was a bird of no other species. Its low warble often came following the notes just mentioned; but sometimes it was given without the preliminary note, and once we heard it utter a loose alarm-cry like that of the fieldfare. It is evidently an earlier breeder than the latter bird. We got four or five of its nests, containing four eggs each; one had five eggs. We found one nest in a spruce-fir built nine feet from the ground, but in no instance did we find a nest nearer than eighteen inches to the ground, nor is it likely that there would be any built lower in a country comparatively flooded. All the redwings were in pairs; we saw no signs whatever of their habits being gregarious.

The blue-throated warbler was very common and tame, allowing us to approach near as it sang perched on a low bush or fed on the ground. It was in full voice, and the variety of its notes formed a perfect medley of bird-music. It frequented marshy ground, whether amongst alders and willows, or in the forests of pines or other trees. We saw several handsome male redstarts, and came upon a pair or two of wheatears in the open sandy pinewood near the village.

In the same locality we saw a few pairs of stonechats. Willow-warblers were very abundant. At Habariki, for the second time, I heard this bird utter a note different from any I had heard in England. It is like the *t-r-r-r*

of the chiffchaff, but it is very difficult to describe it exactly on paper. The nearest letters denoting it are perhaps *z-z-z*; it reminded me very much of the spitting of a cat. We heard the song and also the "*chiv-it*" of the Siberian chiffchaff several times, and succeeded in shooting one bird. When silent we always found it busily engaged feeding like a tit, usually among spruce-firs. Of the Lapp-tit (*Parus cinctus*, Bodd.) we saw two pairs and a few solitary birds.

The note of the waxwing had long been familiar to me, for I had once kept a pair in a cage for some months. I was delighted to hear it once more resounding from the lofty spruce and larch trees in the forest. We succeeded in shooting one pair only; nor were they in very good plumage, having very few and small wax-like appendages on the secondaries. The eggs in the female were very large, and the testes of the male very fully developed. It is therefore probable that they were on the point of building, if they had not already begun. As the yellow on the primaries was I-shaped and not V-shaped, I judged it to be a young bird.

We saw one solitary barn-swallow, and shot it, and came upon many droppings of the capercailzie, but did not see the bird. Several traps were set in the forest to catch the hen, for the cock is not eaten. The peasants call the latter *gluká*, and the female *taitaióra*. Willow-grouse and hazel-grouse, we were told, were abundant in some seasons.

We saw one pair of golden plover on the newly sown cornfields behind the village, and noticed two or three pairs of ringed-plover frequenting the ploughed land below Habariki and the grassy banks of a little stream running out of the Petchora. We rose a pair of double snipe from the young wood on the sandy ground beyond

the fields, and bagged one of them. These were the first examples we had yet seen of the species.

We did not succeed in securing a common snipe, but we often heard their peculiar *tic-tuc* note, and the sound of their drumming high in the air. My companion identified a snipe with his glass as belonging to this species; it was uttering the characteristic note, and later, when it dropped to the ground, it rose again with the zigzag flight belonging to this bird. We were not a little surprised the first time we saw a common snipe perched upon the topmost upright twig of a bare larch seventy feet above ground. We soon grew familiar to the sight; indeed, after what we witnessed of the arboreal habits of birds we are not accustomed to see perching in England, we ceased to feel surprise at the circumstance. The origin of this habit is doubtless due to the flooding of the great tracts of country by the annual overflow of rivers at the time of migration. We saw but one flock of Temminck's stint, feeding on the marshy ground near one of the forest trees. We shot them all, hoping to discover the Little stint amongst them, but we were disappointed.

We found the greenshank and dusky redshank (*Totanus fuscus*) abundant, but did not succeed in shooting an example of either species.

Wood-sandpipers were common, frequenting the edges of the marshes and the forest tarns. This bird, like Temminck's stint, elevates its wings when alighting, until they almost meet. There is a likeness also in the song of the two birds. The note of the wood-sandpiper is decidedly musical. We shot specimens from the summit of high bare trees sixty-five feet at least from the ground.

We shot half a dozen Terek sandpipers, the first we

had yet seen. The favourite resort of these pretty birds was the grassy margin of the stream before mentioned, where they fed on the edge of the water and on the shoals of driftwood which lined it in many places. We also came upon them in the marshy ground round some of the forest tarns. They were extremely tame. Like the wood-sandpiper, they would allow us to come and talk within a few yards of them, letting us take up a position where, by a little patience, a double shot could be obtained. We thoroughly identified the ruff on the marsh, although we failed to obtain a specimen of it.

We saw a bean-geese, which had been shot a day or two before our arrival. We also saw a pair of swans, and identified the skin and head of one shot by a sailor a week or two before our arrival as belonging to the common wild species, *Cygnus musicus*.

Wigeons were by no means uncommon on the lake, the larger forest tarns, and the open water in the marshes. We shot a female off the nest, and took from it five eggs and the down : it was built under a couple of fallen trees crossing each other. The nest had been used the previous year, as old egg-shells were under the down. Several other specimens of this bird were brought to us.

The pintail was the commonest duck about Habariki. We shot a female from the nest, taking nine eggs and the down. This nest also was under a prostrate tree, and not far from the wigeon's. We had one nest of teal with down brought us, together with a male bird. They were not rare. The golden-eye was a common duck, generally seen in pairs on the open water in the marshes and larger forest tarns. We shot a female, and took a perfect egg from her. A nest in the hollow stump of a tree some twenty feet from the ground was shown to us, and we were told that these birds bred there

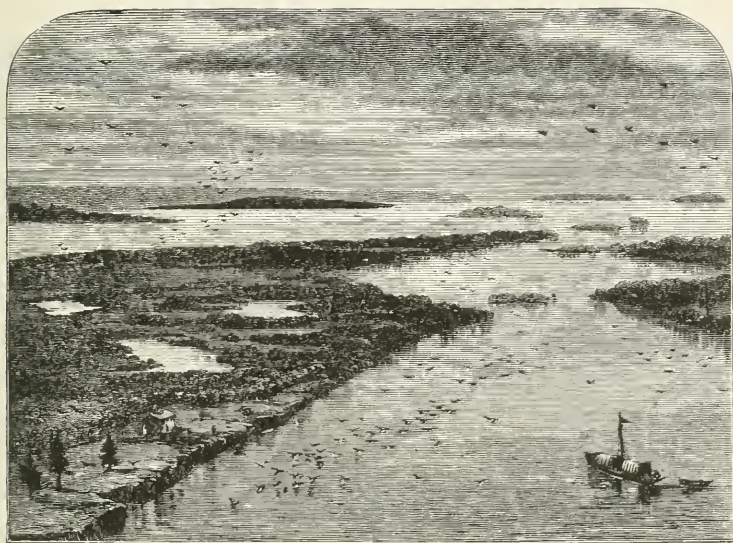
every year. The nest contained ten eggs and plenty of down.

We saw several goosanders, distinctly identifying one pair on the water of the marsh behind Habariki. The smew was rather a common duck ; we saw many pairs on the pools, the large marsh, and the woodland tarns, and secured a fine male. We were told that they breed in low stumps of trees.

We identified the black-throated diver for the first time on the 2nd of June. We saw it several times and heard it flying overhead.

We occasionally saw one or two common gulls and one pair of Siberian herring-gulls. In addition to the above-mentioned birds we frequently saw others that we were unable fully to identify. Thus we often came upon large sandpipers on the marsh whose cry was like that of the redshank ; they were probably the dusky redshank. We also saw a large flock of ducks of a heavy species flying overhead which we imagined to be the eider-duck.

In the woods and forests of Habariki we did not once meet with the raven, the bullfinch, or the yellow-hammer, or with any species of pipit or lark.



THE DELTA OF THE PETCHORA

CHAPTER XIV.

OUR VOYAGE TO THE DELTA.

Return to Ust-Zylma—Wedding of the Engineer's Son—Scarlet Bullfinch—Last Days at Ust-Zylma—Our Boat—We Sail to Habariki—Birds' Eggs—Smew's Eggs—Snipes in Trees—Down the Petchora—Sedge-warbler—Blackcock—Arctic Tern—Willow Swamps—We Cross the Arctic Circle—A New Bird—Arrival at Viski—The Delta—Double Snipe—Pustozersk—The Tundra—Arrival at Alexievka.

WE returned to Ust-Zylma on Sunday, the 6th of June, and attended the wedding of the son of the engineer of Sideroff's steamer. It took place in the church of the Old Believers, but the ritual did not differ much from that of the orthodox ceremonial. The bridal party afterwards sat in state in the house of Sideroff's manager. Coffee was first served, then sherry, afterwards champagne. All the quality, as an Irishman would say, were present, except the public prosecutor. It was an exceed-

ingly formal and slow affair, the only feature of interest being the assemblage of villagers outside, who sang a melancholy tune, while two or three couples slowly walked round each other in a depressed fashion, the gentleman taking hold of one of the lady's arms by the elbow, the other arm interlaced in hers. The girls wore their hair plaited in a pigtail behind, at the end of which a cross-bar was attached, from which dangled half a dozen broad ribbons like a banner screen. They kept their eyes fixed on the ground as they danced, and lifted a handkerchief of many colours to their mouths. All the time vodka was served from a tin can, and through the afternoon and evening the part of the room near the door was filled with an ever-changing crowd of peasant maidens who came to have a good stare at the bride and bridegroom and, having gazed their fill, retired to make way for others, who entered and did likewise.

The next morning a stroll up the chiffchaff valley resulted in nothing, but as we were returning home I heard the song of a bird that was quite new to me—four notes loud and clear. I shot the little songster, and it proved to be a male scarlet bullfinch (*Carpodacus erythrinus*). It was in company with another bird, but this one escaped us. We heard the cuckoo in our morning ramble. Four eggs of the wood-sandpiper were brought to us, and the next day four eggs of the oystercatcher, one of which was slightly set. All that day we worked hard at our eggs; we had blown 143 in all, including the egg of a peregrine falcon which a Samoyede brought us on the 27th of May. He said he found it in a nest built on the ground, containing three others, which he had the clumsiness to break. At night we turned out for a breath of fresh air along the banks of the great river. During our walk we shot a pair of Terek sand-

pipers, the first we had yet seen in Ust-Zylma. We also brought down two Temminck's stints, and afterwards secured our solitary example of the Little ringed-plover (*C. minor*). I shot at it as it rose from and again alighted upon a swampy, hummocky strip of tundra land. The next day a peasant brought us a fine cock willow-grouse, our first, clothed in about half its summer costume. We had also a nest given to us of the wheatear, with one egg in it, and the female bird caught upon it.

We had for some time been on the look-out for a boat in which to make the journey down the river, and by the exertion of Piottuch and the kind help of M. Znaminski, who was much interested in our expedition, we succeeded in obtaining one which suited us very well. A wooden cabin, not unlike a large dog-kennel, occupied the centre, and was just large enough for us to recline in at full length; and at the back of it was a covered space, where our baggage could be packed secure from the heavy rains which occasionally occur in summer. It had one mast, on which we could hoist a square sail whenever the wind was favourable. The current would of course usually be in our favour, but we were also provided with four oars, which, though incapable of propelling the boat at much speed, would be useful in crossing the stream, and in giving her way enough to make the rudder of some use in a calm. We engaged four boatmen, two Russians, a Samoyede, and a half-breed, all of whom possessed some knowledge of the river, while the latter had the additional advantage of being what passed in this district as an enthusiastic sportsman. We left Ust-Zylma on Thursday, the 10th of June, and sailed down to Habariki with a fair wind and a strong current. The banks of the river were covered with birch and spruce woods, alternating with willow-swamps. On our way we landed at

several places, but met with nothing of special interest. Everywhere we found the bluethroat, the redwing, the brambling, the fieldfare, the little bunting, and the willow-warbler common. We saw a solitary sand-martin. The peasants at Habariki had collected eggs for us ; among them those of the redwing, the redstart, the hooded crow, and various ducks. The best nest contained eight eggs. It had been found by two boys, who had divided the eggs and the down between them. Four of these eggs, cream coloured, of a smaller size than the pintail's, were first brought to us, and with them some pale grey down. The lad who brought them said he had found the nest in the old stump of a tree, and the fragments of rotten wood scattered in the down seemed to corroborate his statement. We then sent for the other sharer of the spoil ; he had already sold the eggs, along with another duck's nest, containing six eggs. On our inquiry as to what he had done with the down, he immediately went off for it, and soon brought it to us. It was very pale down, containing small fragments of wood, the exact counterpart of the other portion in our possession. We found, however, that the down of the second nest was mingled with it. We had no difficulty in separating it, for it was brown, and evidently that of the pintail. Ultimately we purchased the batch of ten eggs from Sideroff's manager, who had bought them from the lad. Four exactly matched the four we had secured from his companion ; the other six were the same in size but greenish in colour, and similar to eggs of the pintail duck which we afterwards obtained. Upon showing the boys some skins of ducks, they at once identified the smew as the duck which belonged to the whiter eggs with the pale grey down. These eggs are extremely rare in collections, and we were not a little elated with our prize.

At three the following morning we shouldered our guns and went on shore. We had sat up late blowing eggs, but the excitement of finding ourselves in a locality where rare eggs and birds might be expected made any attempt to sleep fruitless, and we decided to gratify our curiosity without further delay. We shot a Siberian chiffchaff singing and "chiviting" lustily amongst the pines, and heard several cuckoos. The snipes were drumming on the marshes, and three times we marked them perched high up on trees; once upon a dead trunk, and twice on the slender dead branches near the summit of larches. These trees were at least seventy feet high. To put an end to all dispute concerning their species, we settled the question by dropping a common snipe with a No. 4 cartridge. It was shot from the topmost twigs of a lofty larch, just budding into leaf. My afternoon walk, which was a long round on the marsh, resulted in very little. I rose a reeve from her nest, and shot her as she was silently shuffling off. The nest was a rather deep hole upon a grass tussock, lined with dry grass, and in it were four eggs and two feathers. A quantity of yellow wagtails were running along the swampy ground, and perching freely upon the birches growing on the islands formed in the marsh. Their usual cry was a loud *uc* or *us*, but what seemed the call-note to the female resembled the sound *i-i-i-k*; the song is a low chatter like that of the swallow. Ducks were constantly coming and going to and from the open places on the swamp. The wigeon, judging from the frequency of its cry, seemed the commonest species; its loud *m-e-c-e'-yu* was continually to be heard.

In the evening we left the little village of Habariki and proceeded down the river. All the next day we crept slowly down the mighty Petchora, a strong current in our

favour, but the wind contrary, and with only a couple of oars propelling us along. The scenery was often interesting. The west bank, lofty and steep, was now and then clothed to the water's edge with forests of birches and pines; the east bank at that part was a dead flat covered with willows. Numberless islands studded the water, *kurias* running up amongst them, sometimes of great picturesqueness. The *tirrr'-eck'* of the Terek sandpiper resounded continually; and sometimes we heard the cry of the common sandpiper. We shot a brace of the latter, the first we had secured; we found the species very wild. Two or three times during the day we pulled up on an island or on the mainland. On a sandy island thinly covered with grass we came upon a party fishing with a seine net; we watched and saw the net twice drawn without result. On this island we shot a hen-harrier, a cuckoo, and a short-eared owl. A few gulls were flying about—the common gull and the Siberian herring-gull. As we pulled on, I saw a party of six waxwings flying north. Willow-warblers abounded; I watched one for some time that allowed me to approach within six feet of it. I noticed that some appeared to have a whiter throat and a more rapid song than usual. One I heard vociferously uttering a note unlike any that I have heard from the willow-warbler, *tuz-zuk*. These observations convinced me that two species of willow-warblers exist in these parts, and upon a careful examination of our skins afterwards, I found that I had shot an Arctic willow-warbler (*Phylloscopus borealis*). Swans, geese, and ducks, especially the latter, were to be seen in the ponds behind the fringing belts of willows; amongst these we clearly identified the scaup and the black scoter. We found six ducks' nests, most of which were those of the wigeon. In one of these dense willow-swamps lining

the east bank of the river I found for the first time the sedge-warbler. On several occasions, especially at night, we heard its harsh notes, but the bird kept very close, and was very difficult to see. I shot two; one was flying out of a birch-tree, in which it had descended, singing after the manner of the bluethroat. We also secured a red-throated diver, the first added to our list. We saw a rough-legged buzzard, the only one of the species we clearly identified. It was sitting in a low willow-tree, and we shot it, as we silently drifted past, about midnight. We stopped soon after, anchoring in a little creek. A steady rain began to fall, which continued all the following day; we just managed to creep down to the river Yorsa, where again we pulled up *en route*. We saw very few birds, but in the evening we got on shore, and a turn in the rain was not without result. We seemed entangled in a network of willow swamps, lakes, and *kurias* running out of the winding Yorsa. Here and there rose a few taller willows and birches. After a while we came upon a little house, the abode of the hay-cutters in autumn, which our boatmen were now glad to make use of for the night. All around it were long straggling meadows, upon which the grass was just beginning to come up. My companion shot a second yellow-headed wagtail, a male; he saw the female also, but lost her. He also saw a small owl, probably Tengmalm's owl. I secured a fine male goshawk, the only one we identified on our journey. It was in a thick alder-bush when I disturbed it, in the act of devouring a female wigeon. In the same place I shot a short-eared owl. Reed-buntings abounded. I took a nest containing four eggs; it was built inside an old fieldfare's nest, and was nine feet from the ground, in a willow-tree. This is another example of the manner in which birds accommo-

date themselves to the circumstances of a flooded country. We found the little bunting very common, and just beginning to build. Once or twice a white-tailed eagle hovered overhead. In long grass covering the raised bank of the island we discovered a blackcock's nest containing five eggs ; also a wigeon's nest, with seven eggs, and a teal's with six.

The next afternoon we left the Yorsa River : the day was fine, but the wind contrary. We stopped for an hour at Churvinski Ostroff, and had a short stroll on shore armed with walking-stick guns. My companion shot a tree-sparrow, and I a small spotted woodpecker. We also started a three-toed woodpecker out of its hole in a tree ; I shot it, when immediately the female came up, and I secured her also. We whistled for our boatmen, who, by our orders, cut down the tree. The bird's hole was about fifteen feet from the ground, descending nine inches perpendicularly ; there was no lining in it, except plenty of saw- or rather beak-dust. It contained two newly hatched birds and one egg. On our way back we shot a pair of yellow-headed wagtails ; the female had dry grass in her beak, which she was evidently carrying to build her nest. The male was not fully mature, having the nape brown, and dark feathers amongst the yellow of the crown. The yellow of the hen-bird was much less brilliant than that of her mate, and the head and cheeks were greenish-brown, with the exception of a pale yellow streak over each eye, meeting across the forehead. A few miles lower we brought down two little buntings and an oyster-catcher ; we also took a brambling's nest and a duck's, both containing eggs. That evening we saw our first Arctic tern. We spied them from a distance, and brought them within range by imitating their notes. We suspected this species by the ash-grey colour of the lower

parts. Later in the night we had the opportunity of procuring both birds and eggs, and verifying our previous recognition. We had pulled up at one of the islands to boil the kettle for tea and cook some fish. After this meal we began to explore. We shot three terns, and found three nests, securing five eggs in all. As I was in the act of taking up one of these nests, a hare ran up, stood in mute amazement gazing at me for a second or two, and then turned and bolted. On this island we shot an oyster-catcher; it was evident the nest was there, but we could not find it.

Rain and contrary winds accompanied us all the next day; and at night we stopped at Abramoff. We got from the peasants there eggs of the common gull and some of the white wagtail, besides those of the wigeon, golden-eye, fieldfare, and redpoll. We also saw a couple of young ravens. We shot a ringed-plover, a Temminck's stint, and a pair of yellow-headed wagtails. We were now leaving the more hilly country and the forests of pine, and were entering a waste of willows. Far as the eye could reach, on all sides of us, stretched this never-ending, almost impenetrable willow-swamp, with winding *kurias* and lakes. The only break in the monotony was here and there a straggling bit of pasture-land, on which stood a house or two, where a cow fed and the peasants fished, and where, in the autumn, they would make hay. Terns, gulls, and oyster-catchers were now not unfrequently seen, in addition to the almost numberless ducks that were breeding everywhere. On the shores would occasionally appear a Terek sandpiper, a Temminck's stint, or a dotterel. In the thickets the bluethroat was giving way to the sedge-warbler, but the willow-wren remained the commonest bird. The notes of the redpoll, the brambling, and the redwing still sounded. The

fieldfare and the reed-bunting, as well as the yellow-headed, yellow, and white wagtails were still often to be met with, the little bunting being especially plentiful. That day I took my first nest of the Terek sandpiper. I was walking in a wood of tall willows, when the bird rose at my feet and silently fluttered away. There were four eggs laid in a slight hollow, lined with broad grass. We also found the nest of an oyster-catcher, containing four eggs.

We were now a little to the north of the Arctic Circle, and at three in the morning moored our boat on the shores of an island among whose willows grew an occasional birch or alder. I spent five hours upon it. Sedge-warblers were singing lustily, and sometimes so melodiously that we almost took them to be bluethroats. Soon, however, my attention was arrested by a song with which I was not familiar. It came from a bird singing high in the air, like a lark. I spent an hour watching it. Once it remained up in the sky nearly half an hour. The first part of the song was like the trill of a Temminck's stint, or like the concluding notes of the wood-warbler's song. This was succeeded by a low guttural warble, resembling that which the blue-throat sometimes makes. The bird sang while hovering; it afterwards alighted on a tree, and then descended to the ground, still continuing to sing. I shot one, and my companion an hour later shot another. Both birds proved to be males, and quite distinct from any species with which either of us was previously acquainted. The long hind claw was like that of the meadow-pipit, and the general character of the bird resembled a large and brilliantly coloured tree-pipit. It was very aquatic in its habits, frequenting the most marshy ground amongst the willows.

On our return home five skins of this bird were

submitted to our friend Mr. Dresser, who pronounced it to be a new species, and described and figured it in a work which he was then publishing on the birds of Europe. In honour of my having been the first to discover it he named it after me, *Anthus seebohmi*,* but, alas for the vanity of human wishes, I afterwards discovered that the bird was not new, but had been described some years before from examples obtained on the coast of China. I had subsequently the pleasure of working out its geographical distribution, as the reader who cares to peruse the accompanying footnote may learn. The honour of having added a new bird to the European lists still remains to us, and is one of the discoveries made upon our journey on which we pride ourselves.

In the evening we reached Viski, a small town with a church built upon a flat piece of pasture-land. It was the first village containing more than half a dozen houses

* The Siberian pipit (*Anthus gustavi*, Swinhoe) was perhaps the most interesting discovery which we made during our journey. It was first described by Swinhoe in 1863, from specimens obtained at Amoy, in South China, on migration. It is seldom that the history of an obscure bird is so suddenly and completely worked out as has been the case with this species. In 1869, G. R. Gray, of the British Museum, redescribed the species as *Anthus batchianensis*, from skins collected by Wallace on the island of Batjan in the Moluccas. In 1871 Swinhoe announced the identity of Gray's birds with the species with which he had previously described from South China. Three years later he identified the species in North China on migration, and also obtained a skin from Lake Baikal. The year after our visit to the Petchora, Drs. Finsch and Brehm found it in the valley of the Ob, a little to the north of the Arctic Circle, and I afterwards found skins in the British Museum from Borneo and Negros in the Philippine Archipelago, and also obtained information that it had been procured in winter at Manila and in Celebes. In 1877 I found it breeding in considerable numbers in the valley of the Yenesei in latitude $70\frac{1}{2}^{\circ}$, and on my journey home I identified skins in the Museum at St. Petersburg, collected by Baron Maydell in Tschuski Land, north of Kamtschatka, and on Bering Island to the east of the peninsula, collected by Wossnessensky. We may therefore conclude that the Siberian pipit breeds on the tundras beyond the limit of forest growth, from the valley of the Petchora eastwards to Bering's Strait, that it passes through South-Eastern Siberia and East China on migration, and winters in the islands of the Malay Archipelago.

and the first church that we had seen since leaving Ust-Zylma. It is reputed to be the residence of several rich peasants, one of whom is the owner of 10,000 reindeer valued at a sovereign each. Without exception it is the dirtiest place I have ever been in. The peasants keep cows, but as they have no arable ground the manure is valueless and is thrown outside the house to be trodden under foot. There was an excellent shop in the place, where we laid in a store of tobacco, white flour, etc. In the village we saw a sand-martin and a magpie, but no sparrows.

On leaving Viski we entered upon the true delta, a labyrinth of water and islands, one almost as dead a flat as the other. The islands—which but a little while ago had lain three or four feet deep under the overflow of the great river—were almost all alike. They were monotonous willow-swamps, with here and there narrow strips of sandy land appearing, thickly covered with grass and sparingly sprinkled with willows and alders. Everywhere were the winding *kurias* and chains of lakelets. On the dry places ducks of various sorts were breeding. We identified a shoveller, and there were wigeons, scoters, and teal. On one island we found two pintails' nests with eggs, and I shot our first tufted duck, a species which we found very rare in the Petchora. As soon as I fired there rose between me and it a flock of red-necked phalaropes, which alighted between me and the floating body. I shot five: they were the first we had yet secured, but later in the day we brought down four more. My companion meanwhile was exploring another island, where he fell in with a flock of ruffs at their "lecking" place. He shot two. Geese were becoming more and more plentiful; in one instance we marked a flock of fifty at least. Swans often passed us by twos and threes. The sand-

pipers, the Terek, and Temminck's stints were as common as ever. We watched one of the latter to its nest, shot it, and secured the four eggs. Early next morning I brought down a skylark, the second only that we had seen. I also shot a blue-throat, a species which by this time had grown very rare. The commonest warbler, abounding in some places, was the sedge-warbler, next to it was the willow-warbler. Now and then also we heard the red-wing, and generally where we stopped there would greet us the song of the new pipit pouring down from the sky. The bird would remain up in the air for a long time, then fly down and alight in the middle of a dense willow swamp, rendering it impossible for us to secure another specimen. A red-throated pipit that my companion shot out of a tree furnished us with the best possible evidence that this species is much more arboreal in its habits than the meadow-pipit. The yellow-headed wagtail had now become quite a common bird, but occasionally we still saw the white wagtail. At one island we shot a pair of small spotted woodpeckers, which must have found the alder and willow-trunks very small for their nests. I found also two fieldfares' nests, one with four, the other with six eggs. Late in the evening we came upon a large flock of great snipe, and in the course of half an hour we had shot ten. They were flying about in companies of about six, continually alighting on the ground, where the sound of their feeding was often heard. One or two common snipe were also hovering overhead and frequently drumming. On one island we saw signs that the breaking up of the Petchora did not take place so silently in the delta as it had done at Ust-Zylma. On the flat shore we discovered a small range of miniature mountains some eighteen to twenty feet high. We took them at first from a distance to be low sandhills, but on nearer

approach found them to be a pile of dirty blocks of ice.

We arrived at Pustozersk at midnight on June 18, and spent the night shooting. The country was a sort of rolling prairie, rising here and there into dry moorland, on which grew birches, junipers, and a few pines. The lower land remained a willow-swamp. Among the sand-hills we found a couple of terns' nests and one of the Terek sandpiper. Plenty of Temminck's stints were about, but we failed to find any nests. We shot a couple of sand-martins preparing to build. In a walk that I took on the dry moorland I stalked a couple of willow-grouse sitting upon a birch-tree, very conspicuous objects for a mile around. I also rose a shore-lark from its nest, in which I found four young birds, and secured a golden plover, one of whose axillary feathers was blotched with brown. In this part of the moor the yellow-headed wagtails abounded. Down in the marshy ground I shot a ruff, and saw several others, besides a number of red-necked phalaropes; but of all the birds the most interesting were the pipits. Our new pipit was here by no means uncommon; two or three would sometimes be singing together. We secured two more specimens, one of which must have been trilling its roundelay up in the air for nearly an hour before we were able to shoot it. These pipits poured their song indifferently from the sky, or perching on a bough, or down upon the ground. The red-throated pipit we also found settling freely in trees. In the swampy ground we saw many sedge-warblers, fieldfares, and redwings, and one or two blue-throats. The next night we again spent shooting in a willow-covered island just opposite Kuya. We had grown very weary of these islands, and somewhat disappointed in the result of our ornithological experience of the delta. We

had indeed secured some interesting species of birds, but each island had proved almost a repetition of the others—the same landscape, the same conditions, the same bird-life. We were nearing Alexievka, however, and on the eastern side of the river we could almost distinguish the low outline of the skirts of the great Zemelskaya Tundra, stretching away, we knew, on the east to the Ural Mountains, on the north-east to the gates of the Kara Sea; and the tundra was the unexplored land, the land of promise.

On this island we took the nest, containing seven eggs, of a pintail, shooting the bird as she was flying off. We found also those of the red-necked phalarope, the great snipe, and the reed-bunting. Our most exciting nest-discovery was that of a swan. It was a large nest, made of coarse grass lined with a little down and a few feathers, and containing three eggs. It was placed upon a bank between two marshes, half-concealed by willow-scrub. The most interesting birds we shot were a black scoter, a herring-gull, and a long-tailed duck, the first we had yet seen on our travels. Its cry was not unlike the word “colguief.” Of all species of ducks it is the tamest and yet one of the most difficult to shoot, for it is an expert at diving, and eludes the sportsman’s aim by its rapid and repeated plunges under the surface of the water.

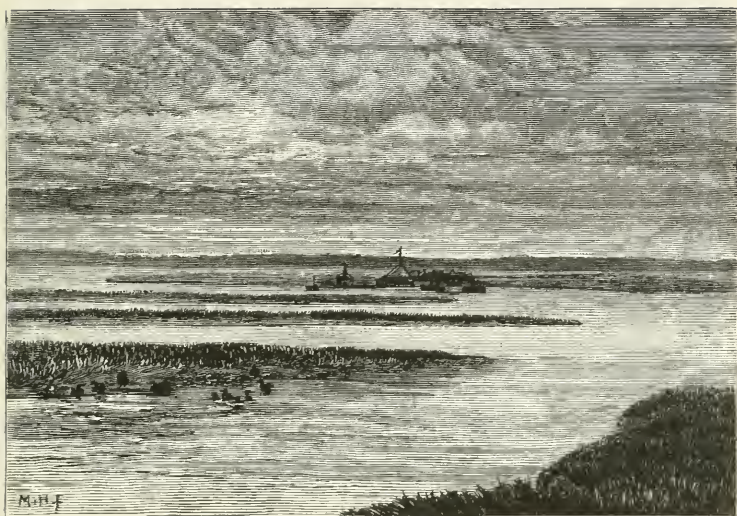
Just before reaching Alexievka we anchored for an hour at another island, about which seven swans were sailing. The graceful birds, however, did not give us the chance of a shot. Upon this island we had an excellent view of our first great black-backed gulls, and also of Buffon’s skua. The former were sitting amidst several Siberian herring-gulls, but their superior size allowed us to identify them at a glance. The Arctic tern

was breeding on this island, while ruffs, phalaropes, and Temminck's stint abounded upon it. On one part, covered with dwarf willows, interspersed with taller trees, I heard to my astonishment the warble of the Siberian chiffchaff, two specimens of which I secured. The red-throated pipits were there perching, as usual, in the boughs, and I noticed also one or two of our new pipits and a number of reed-buntings.

This bird-haunted island was our last stoppage before reaching Alexievka. We arrived at our destination on the evening of the 19th of June, after ten days voyage down the great river and through the intricacies of the monotonous delta.



PLOUGHING AT UST-ZYLMA



ALEXIEVKA FROM THE TUNDRA

CHAPTER XV.

ALEXIEVKA.

Alexievka—The Timber Rafts—The Island—Nests and Eggs—Buffon's Skua—Sailing for the Tundra—Description of the Tundra—Its Vegetation—Nests of Lapland Bunting and Red-throated Pipit—First Sight of the Grey Plover—Its Nest—Omelette of Grey Plover's Eggs—Birds seen on the Tundra—Eggs collected during the Day—Nest of *Anthus gustavi*.

ALEXIEVKA is the shipping-port of the Petchora Timber-trading Company. It is a group of houses built upon an island in the delta of the great river, where the ships are laden with larch for Cronstadt. The larch is felled in the forests 500 or 600 miles up the river, and roughly squared into logs varying from two to three feet in diameter. It is floated down in enormous rafts, the logs being bound together with willows and hazel-boughs. These rafts are manned by a large crew, some of whom help to steer it down the current with oars and

poles, while others are hired for the season to assist in loading the ships at Alexievka. Many of the men bring their wives with them to cook for the party ; sleeping huts are erected on the raft, and it becomes to all intents and purposes a little floating village, which is frequently three months in making the voyage down the river. Marriages have been known to take place on these rafts. Occasionally a funeral has to be performed, and sometimes all hands are engaged in helping to keep the raft under the lee of an island or a promontory to avoid the danger of having it broken up by the violence of the waves. With the greatest care in the world this will sometimes happen. The Russian has a good deal of the fatal facility to blunder which characterises the Englishman, and shiploads of stranded logs of larch are strewn on the islands of the delta and on the shores of the lagoon of this great river.

When we landed on the island of Alexievka it was a rapidly drying-up willow-swamp of perhaps half a dozen square miles, some six feet above the level of the Petchora, which swept past it with a rapid current. In some places the willow-swamp was impenetrable, in others bare grassy oases varied the flat landscape, and there were one or two largish lakes on the island. During the floods which accompanied the break-up of the ice, the whole of the island was under water, and men were busily clearing away the mud which had deposited itself on the floors of the houses. An extensive series of wooden fortifications protected the various buildings from being carried away by the ice. For four months of the year the village was a busy scene, full of life and activity, but for the remaining eight months a solitary man and a dog kept watch over the property of the Company, and even they had to desert their charge and escape to the shore during the breaking-up of the ice.

Three rooms were generously placed at our disposal, and we proceeded to make ourselves as comfortable as the circumstances would permit. Our first care was to buy a brace of willow-grouse and a bean-goose for the pot; our next to purchase eggs of the yellow-headed wagtail, bean-goose, willow-grouse, and long-tailed duck. A nest of the white wagtail which we found contained remarkably brown eggs; it was made chiefly of roots and a little stalky grass, and was lined with reindeer hair. The next day peasants brought us two nests of the yellow-headed wagtail, which were also composed of fine roots and dry leafy grass, the inside lined with reindeer hair; one had, besides, two small feathers and a piece of duck-down.

The mosquitoes, which of late had tried us severely, were now giving us a respite, driven back by the cold north wind and occasional snowstorms. All day I kept indoors, going out but for half an hour, when I bagged a Siberian chiffchaff and a red-throated pipit perched in a tree. The nests came in plentifully. The first day of our stay there were brought to us those of the blue-throat, the redpoll, the reed-bunting, the willow-warbler, two of the bean-goose, with the goose snared upon it, and one of the pintail duck. With these were brought two wigeon's eggs. The weather continued very cold; the Petchora looked sullen and tempestuous under the dark sky and bleak wind. The next day we again kept indoors, profiting by our enforced captivity in having a general overhauling of our skins. We found the Siberian chiffchaff the commonest warbler amongst the willows of Alexievka. Its note is a "ching-chevy" repeated three or four times in rapid succession with the accent laid on the "ching," and the warble generally, but not always, ending with a final "ching." Probably owing to the

coldness of the weather we did not then hear it in full song, as we did at Ust-Zylma and Habariki. We found Buffon's skuas numerous in Alexievka ; they were usually in flocks of five or six. There seemed to be only one common sparrow in the place, and this I shot.

The 22nd of June was inscribed in our journal as a red-letter day. We were dead tired when we turned into our hammocks at half-past ten the night before, and slept the clock round and an hour over, rising at half-past eleven. When we woke we found it was a bright warm day, the wind had dropped, and the great river looked no longer like an angry sea. We decided to cross it, ordered our men to get the boat ready, made a hasty breakfast, and set sail at last for the land of promise, the mysterious tundra. We pictured this great land to ourselves as a sort of ornithological Cathay, where all sorts of rare and possibly unknown birds might be found. So far we had been just a little disappointed with the results of our trip. July would soon be upon us, and we had not yet solved one of the six problems that we had proposed to ourselves as the main objects of our journey. We had not seen the least trace of the knot, the curlew sandpiper, the sanderling, or the grey plover. Some birds that we had at first fancied might be Little stints in full breeding plumage, we were now thoroughly convinced were nothing but Temminck's stints, and as we had hitherto met with but one species of swan, we had reluctantly come to the conclusion that we had not yet seen Bewick's swan. We congratulated ourselves that our observations on the arrival of migratory birds at Ust-Zylma were not without interest. We were much pleased that we had shot one specimen of the Arctic willow-warbler. The abundance of yellow-headed wag-tails, and the prospect of bringing home many of the

eggs of this rare bird, was a source of considerable satisfaction to us. Our two best things were undoubtedly the new pipit and the Siberian chiffchaff. We hoped that both these birds might be new, but our acquaintance with the various Indian species that might possibly migrate into this region was not sufficient to warrant us in entertaining more than a hope. We therefore looked forward to our first day on the tundra with more than usual anxiety and interest.

The tundra forms the east bank of the Petchora, and we anchored our boat under a steep cliff, perhaps sixty feet high, a crumbling slope of clay, earth, sand, gravel, turf, but no rock. We looked over a gently rolling prairie country, stretching away to a flat plain, beyond which was a range of low rounded hills, some eight or ten miles off. It was in fact a moor, with here and there a large flat bog, and everywhere abundance of lakes. For seven or eight months in the year it is covered with from two to three feet of snow. Snow was still lying in large patches in the more sheltered recesses of the steep river-banks, and on one of the lakes a large floe of ice, six inches thick, was still unmelted. The vegetation on the dry parts of the tundra was chiefly sedges, moss, and lichen, of which the familiar reindeer-moss was especially abundant. In some places there was an abundance of cranberries, with last year's fruit still eatable, preserved by the frost and snow of winter. Here and there we met with a dwarf shrub, not unlike a rhododendron, with a white flower and aromatic-scented leaves (*Ledum palustre*), a heath-like plant with a pale red flower (*Andromeda polifolia*), and dwarf birch (*Betula nana*) running on the ground almost like ivy. The flat boggy places had evidently been shallow lakes a few weeks ago after the sudden thaw, and were now black swamps; water in the

middle, grown over with yellow-green moss, and sedges towards the edge. They were separated from each other by tussocky ridges of moor, which intersected the plain like the veins on the rind of a melon. We found no difficulty in going where we liked; our indiarubber waterproofs were all-sufficient. We crossed the wettest bogs with impunity, seldom sinking more than a foot before reaching a good foundation, a solid pavement of ice. Birds were but thinly scattered over the ground, but there were sufficient to keep our curiosity on the *qui vive*. The commonest bird was the Lapland bunting, and we took two of their nests in the tussocky ridges between the little bogs. The next commonest bird was the red-throated pipit, and we found two of their nests in similar positions. As we marched across the tundra we fell in with some dunlins, and took a couple of their nests. This was encouraging. The dunlin was a bird we had not seen at Ust-Zylma, and one possibly that migrated direct across country to Ust-Ussa. We had not walked more than a couple of miles inland before we came upon a small party of plovers. They were very wild, and we found it impossible to get within shot of them; but a distant view through our binocular almost convinced us that we had met with the grey plover at last. On going a little farther other plovers rose, and we determined to commence a diligent search for the nest, and offered half a rouble to any of our men who should find one. Our interpreter laughed at us, and marched away into the tundra with a "C'est impossible, monsieur." We appealed to our Samoyede, who stroked his beardless chin and cautiously replied, "Mozhna." The other men wandered aimlessly up and down, but the Samoyede tramped the ground systematically, and after more than an hour's search found a nest on one of the dry tussocky ridges

intersecting the bog, containing four eggs about the size and shape of those of the golden plover, but more like those of the lapwing in colour. The nest was a hollow, evidently scratched, perfectly round, somewhat deep, and containing a handful of broken slender twigs and reindeer-moss. Harvie-Brown concealed himself as well as he could behind a ridge, to lie in wait for the bird returning to the nest, and after half an hour's watching shot a veritable grey plover. Soon afterwards another of our men found a second nest, also containing four eggs, in an exactly similar situation. Harvie-Brown took this nest also in hand, and in about an hour succeeded in shooting the female. The third nest was found by the Samoyede. This time I lay down behind a ridge some thirty yards from the nest, and after waiting a quarter of an hour caught sight of the bird on the top of a distant tussock. Presently she ran nearer to another ridge, looked round, and then ran on to the next, until she finally came within fifty yards of where I was lying. I had just made up my mind to risk a shot when she must have caught sight of me, and flew right away. In a quarter of an hour I caught sight of her again, approaching by short stages as before, but from an opposite direction. I must have been in full sight of her. When she had approached within fifty yards of me, as near as I could guess, I fired at her with No. 4 shot and missed. I remained reclining where I was, with little hope that she would try a third time to approach the nest, and whiled away the time with watching a Buffon's skua through my glass as it cautiously approached in my direction. Turning my head round suddenly I caught sight of the grey plover running towards the nest within fifty yards of me. I lifted my gun and fired again, but was so nervous that I missed her a second time. I was so vexed that I got up and

walked towards the skua, which still remained *in statu quo*. I missed a shot at it too, spent some time in a vain search for its nest, and returned to my old quarters. In ten minutes I saw the grey plover flying up. It took a wheel in my direction, coming almost within shot, and evidently took stock of me, and satisfied itself that I was a harmless animal practising with blank cartridge, and having no evil design upon its eggs. It alighted about fifty yards beyond the nest, and approached less timidly than before. When it came within fifty yards of me I fired, this time with No. 6 shot, and laid the poor bird upon its back. As we returned to our boat Harvie-Brown found a fourth nest, and, after watching as before, secured the bird. We accidentally broke two of the eggs belonging to the third nest, but reached Alexievka at midnight with fourteen identified grey plover's eggs. Two sittings were quite fresh, and made us an excellent omelette for breakfast the next morning. The other two were very slightly incubated.

On the tundra we saw several Buffon's skuas, and shot two. I also shot a willow-grouse on a piece of swampy ground near a lake, where a few dwarf willows were growing. On the lakes we saw many pairs of long-tailed ducks. A few pairs of yellow-headed wagtails, which evidently had nests, a redwing, a Temminck's stint, a few pairs of bean-geese, a redpoll, and a hawk, which, as far as I could make out with my glass, was a male peregrine—this completed the list of birds we saw on the tundra.

On our return to headquarters we found that the price we had paid for the eggs to the workmen had induced many of them to go out bird-nesting, and at night our bag for the day stood as under, as far as eggs were concerned :—

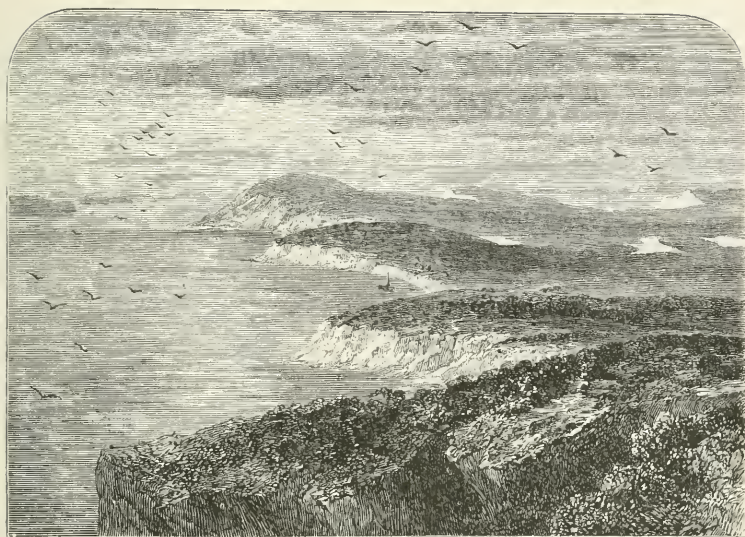
Grey plover	14
Dunlin	7
Great snipe	4
Lapland bunting	25
Red-throated pipit	39
Yellow-headed wagtail	10
Mealy redpoll	16
Reed-bunting	12
Redwing	3
Bean-goose	11
Wigeon (with down)	17
Temminck's stint	4
	162

This was a grand haul. Any little lingering feeling of disappointment which we had experienced was now completely gone. The grey plover eggs alone would have made our trip a success. They were unquestionably the first that had ever been taken in Europe. We spent the next two days in blowing our eggs and writing up our journals, occasionally strolling out among the willows on the island to bag a few yellow-headed wagtails and other birds to keep Piottuch employed. We found that the swans' eggs that we had brought from Kuya were perfectly fresh. The eggs of the bean-goose, on the contrary, some of them more than a week old, were mostly considerably incubated. The ducks' eggs were all fresh, or nearly so. Most of these were wigeon's, pale cream-coloured eggs; the down large, dark brown, very distinctly tipped with white and with pale whitish centres. The red-throated pipits and Lapland buntings' eggs were, many of them, too much sat upon to be easily blown, as were also the dunlins' eggs. The eggs of Temminck's stint, red-necked phalarope, yellow-headed wagtail, and most of the redpolls were all fresh or very slightly sat upon. The eggs of the gulls, both those of the common species and of the Arctic herring-gull, were quite fresh, whilst some of those of the Arctic tern were

fresh, and some considerably incubated. During these two days we found several nests of the fieldfare on the island, a nest of the willow-warbler, and one of the yellow-headed wagtail. The latter was on the ground, concealed amongst the old tangled grass which the floods had twisted round a stake. It was principally composed of dry herbage, with one or two feathers in the lining. Our two *rare aves*, which we christened the Petchora pipit, and the Siberian chiffchaff, were by no means uncommon, but we failed to find either of their nests. Amongst the nests, however, which our excellent coadjutors the Zyriani brought us was one which we at once concluded could belong only to the Petchora pipit (*Anthus gustavi*). It contained five perfectly fresh eggs, larger than those of the red-throated pipit, and similar in colour to those of the meadow-pipit. The nest was somewhat larger than that of the red-throated pipit, composed of more aquatic-looking flat-leaved grass, and containing fragments of *Equisetum* in the lining. Our collection of eggs increased rapidly. We had now 145 sittings, numbering 681 eggs.



OLD RUSSIAN SILVER CROSS



STANAVIALACHTA

CHAPTER XVI.

STANAVIALACHTA.

The Tundra near the Yushina River—Golden Plover's Eggs—Abundance of Nests—Lapland Bunting—Richardson's Skua—Means of Propelling our Boat—The Tundra near Stanavialachta—Eyre of a Peregrine Falcon—More Nests—Abundance of Willow-grouse—Nest of the Willow-grouse—Visit to two Islands in the Delta.

THE next day we left Alexievka in the morning to spend a few days exploring the tundra in the neighbourhood of Stanavialachta, the old loading-place of the Petchora Timber-trading Company, about forty versts down the river, where we learnt there were several wooden houses that we could occupy. We sailed about twenty versts down to the mouth of a small tributary called the Yushina. The tundra here was less marshy, the ground more hilly, and upon it were more willows. The country looked so inviting that we cast anchor and went

on shore for a stroll. We soon saw some plovers, and were in hopes of a second haul of grey plovers' eggs. After a time our Samoyede discovered a nest, but the eggs in it were of a much lighter ground colour than those we had found before. We waited and shot the bird, but to our disappointment it turned out to be a golden plover. We afterwards saw several more. We could not detect any difference in the habits of the two species at the nest. We secured a bean-geese off its nest with seven eggs, and were very successful in finding nests of small birds. We took eggs of reeve, ringed-plover, willow-warbler, Lapland bunting, red-throated pipit, blue-throated warbler, redwing, Temminck's stint, and willow-grouse. The redwing's nest contained six eggs. It was in a willow about four feet from the ground. Redpolls were common, and oftener to be met with on the ground than in the willow and birch-bushes. The Lapland bunting we constantly saw both running and hopping on the ground. These charming birds were very tame and very numerous. They perched freely in the bushes. They were busily employed in the duties of incubation, and we rarely, if ever, heard them sing. In Finmark I used to hear their song constantly ; but then they were only just beginning to breed. We saw many red-throated pipits, carrying flies in their mouths, evidently destined to feed their young, and if we came inconveniently near their nests they would fly uneasily from bush to bush. Near a couple of deserted turf huts we noticed the white wagtail and the wheatear. The yellow-headed wagtail was also frequently met with on the tundra, but not in anything like the numbers in which we found it on the islands of the delta. On the banks of the great river numerous Siberian herring-gulls were slowly sailing past, and we shot four. I shot a Richard-

son's skua, which heedlessly flew within range of my gun. This was the first example of this species which we had yet seen. It was as white underneath as the Buffon's skuas, but the centre tail-feathers were much shorter. Curiously enough we never met with the dark-bellied variety of Richardson's skua in the Petchora. It must be the western form. I found it by far the commonest variety in Finmark. We saw a few Arctic terns, and got one egg. On the lakes the long-tailed duck was common, and I shot two males. These birds are very quarrelsome, and by no means so shy as the other ducks. My companion identified a red-breasted merganser, but did not succeed in shooting it. I saw a great snipe, a large flock of red-necked phalaropes, a few pairs of fieldfares, and several black-throated divers. Every day the tundra became gayer with flowers, and we continually regretted that we were not botanists. I noticed *Equisetum variegatum* for the first time. The evening, or what ought to have been the evening, turned out so cold, with a strong contrary wind, against which our stupid keelless boat could make little headway, that finding the tide was also against us, we cast anchor in a creek for a night's rest. In the morning, by dint of hard rowing for some time, then of thrusting with a pole, as is done in the flat-bottomed boats on the Grecian lagoons, then turning out two of our men, and making them drag us along, canal-boat fashion, we at length arrived at Stanavialachta. We spent the day in making the Company's deserted houses sufficiently waterproof to afford us good shelter for a few days. In the evening we turned out for a stroll; the tundra in this locality was much more hilly, and was diversified with more lakes than in the neighbourhood of Alexievka. The high ground was very dry, and we seldom came upon any

impassable bog. The vegetation also was more abundant, the flowers more varied, and the willows and dwarf birch-trees more numerous. The weather was very unfavourable; a strong gale was blowing from the west, and it was very cold, with occasional attempts at rain, yet we saw many birds. The red-throated pipit was by far the commonest. My companion shot a meadow-pipit from a tree, and caught another sitting on its nest. We saw several golden plover, a flock of seven or eight Buffon's skuas, a pair of dotterel, and one or two shore-larks, besides securing the nest of a bean-geese containing two eggs. On the grassy top of a mound, half-way down the mud cliffs overlooking the great river, and within sight of the Arctic Ocean, I came upon the eyrie of a peregrine falcon. It contained four eggs, one of which was much lighter in colour than the others. This mound had probably been used for some years as a nesting-place by the falcons, since the grass was much greener upon it than upon the surrounding places. A little way off there rose another mound, just similar to it, and this was apparently the falcons' dining-table, for scattered all about it were feathers of grouse, long-tailed duck, and divers small birds.

While I remained near the nest, the two falcons hovered around, uttering sharp cries; when I approached nearer still, they redoubled their screams, hovered over me, closed their wings, and descended perpendicularly till within a few yards of my head. Their movements were so rapid that I wasted half a dozen cartridges in trying to secure them, and had at last to leave them, baffled in the attempt. My companion and I returned to the charge on the following day; but again we were defeated. A mile up the river, however, we found a second eyrie upon an exactly similar green-topped

mound. The nest contained three eggs, and the behaviour of the birds as we neared it was the same as had been that of the falcons of the day before. My companion succeeded in shooting the male. We found many nests of other birds. Our Samoyede in the morning brought us one of the black-throated diver, containing two eggs, and in the course of the day we found a second. We also secured nests of the golden plover, long-tailed duck, wheatear, Temminck's stint, blue-throat, and Lapland bunting; in the latter were young birds. Our most interesting find, however, was the nest with two eggs of Richardson's skua, placed on a tussock of mossy ground. It was lined with some reindeer moss and leaves of the surrounding plants. The devices of the birds to deceive us, as we came near it, attracted our attention and revealed its vicinity. They often alighted within fifteen yards of us, shammed lameness and sickness, reeled from side to side as if mortally wounded, then when we persisted in our onward course they flew boldly at us and stopped repeatedly.

We again saw the dotterels, but apparently not yet nesting. Willow-grouse were as plentiful on this part of the tundra as red grouse on the Bradfield moors on the 12th. Their white wings and their almost entirely white bodies made them very conspicuous objects. They usually rose within shot from a patch of willow cover. Sometimes we saw a pair knocking about the tundra like two big white butterflies, with a peculiar up-and-down flight, then they tumbled into a willow-grown knoll on the hillside. It might be owing to their extreme conspicuousness that their flight always seemed so much more clumsy than that of the red grouse. One of their nests, which we found on the ground, contained a baker's dozen of eggs. It was a mere hollow scraped in the turf,

lined with a leaf or two, a little dry grass, and a few feathers. The next day we succeeded in shooting the female peregrine on the first eyrie we had discovered, then, after taking a sketch of the place, we set out for Alexievka, visiting on our way a couple of islands on the delta. The first on which we disembarked was very marshy, and covered with small willows. On this island the willow-warblers were rare, but we occasionally heard the Siberian chiffchaff, and we noticed one almost incessantly repeating "*chi-vit'-che-vel'*." The yellow-headed wagtail was common, the shore-lark had disappeared altogether, the Lapland bunting was represented by a solitary bird. Red-throated pipits were still numerous; but we did not see the meadow-pipit. The sedge-warbler abounded. We also saw several Temminck's stints, phalaropes, a flock of eight Buffon's skuas, and ducks of various sorts. The other island was almost entirely a grassy marsh, interspersed with spaces of open water. A flock of Siberian herring-gulls hovered about a party of fishermen, who were catching with a seine net a small fish exactly resembling the herring. Temminck's stints congregated in great numbers on the dry or drying mud, but we could find no trace of their nests. Phalaropes single and in flocks were common; we took three of their nests, also one of a tern. Ducks as usual abounded; we noticed among them a pair of shovellers, and carried off a nest, containing three eggs and a little down, which belonged to this bird. On the river we continually passed flocks of scaup and black scoter.

The sketch of Stanavialachta at the head of this chapter was taken from one of the peregrines' eyries; the second eyrie was half-way down the point to the extreme left. To the right in the distance is the eastern boundary of Bolvanskaya Bay; to the left, the outer islands of the delta.



GREY PLOVER'S NEST AND YOUNG

CHAPTER XVII.

AFTER GREY PLOVERS AT WASILKOVA.

Examination of our Nests—Excursion to Wasilkova—Search for Breeding Haunts of Bewick's Swan—News from England—Grey Plover's Eggs—Flock of Buffon's Skuas—Black Scoter's Nest—Watching for Skuas' Nests—Another Nest of Grey Plover—Scaup's Eggs—The Zyriani.

ON the 29th of June the weather was very wet. We spent the day in blowing eggs and examining our nests. We had now five nests which we were pretty sure were

those of our new pipit ; they were entirely distinct from that of the red-throated pipit. Instead of being composed of fine round grasses they were made of flat-leaved grass, knotted water-plants and small leaves, and in two of them were *Equiseta*. The eggs in them were larger, more lark-like, a dark ring circled the larger end, and they were all more or less mottled, especially those of the lighter variety.

Buffon's skua, we found, had been feeding upon beetles and cranberries. Another fact worth noticing was that the ten great snipes which we shot near Pustozersk were all males.

The following morning proving fine we set off on an excursion to Lake Wasilkova, which at high flood was but a bay of the Petchora. The tundra inland was the usual stretch of rolling moorland, swamp, and bog, interspersed with lakes and ranges of low sandy hills. On the swamps we found dunlins, on the moors golden plover, and once we saw a grey plover. In both localities we met the Lapland bunting and the red-throated pipit, and the dry grassy hills were haunted by shore-larks. On one of the lakes and along the coast we came upon Siberian herring-gulls; longtailed ducks abounded on the stretches of open water, but we failed to find a nest. We came to a spot on the shore where a pair of peregrines had built their eyrie, but the peasants had taken the eggs away for food. Under a low willow bush we shot a black scoter as she sat on her nest. Once we saw a hen-harrier beating up the hillsides, and caught sight of a white-tailed eagle as it flew overhead. Among the willows in the low swampy ground we shot a pair of wood-sandpipers, and caught three of their young, apparently a couple of days old. We also saw a raven and many Buffon's skuas. During the day the mosquitoes were very troublesome in the sheltered parts

of the tundra, but a cold north wind kept the hilltops clear.

Hitherto, we had been unable to identify the swans that during our voyage had flown overhead, or settled on the ice in the river. We were convinced that there were two different sizes, but had been unable to establish the fact. On an island near Kuya we had found one nest



A SWAN'S NEST

containing four large eggs, but we had failed to secure the bird. To determine the breeding haunts of Bewick's swan was one of the principal objects of our journey, but as yet the offer of five roubles reward for any swan's eggs accompanied by the parent bird had resulted only in two or three nests being brought to us without the bird. Our Samoyede now brought us two swan's eggs that he had found thrown out of a nest, and advised us of a second nest containing four eggs. We despatched him at once to the latter with a trap to try and catch the

bird. That day we also bought two very small swan's eggs, smaller than those of the ordinary wild swan, from a fisherman. He told us that his mate had the skin of the parent bird, which he had caught at the nest. The fishing encampment from which he came was lower down the river, on an island opposite the hamlet of Stanavialachta. We could not think this was a made-up story, for the man could not have heard of the reward we had offered for eggs accompanied with the captured parent bird, as we were the first to speak to him on his arrival. We therefore at once determined that if we did not discover Bewick's swan in the neighbourhood of Alexievka, we would make an excursion to Stanavialachta for the express purpose of obtaining the head and skin of the bird whose eggs we had just bought.

The following day our Samoyede returned from his excursion in quest of the swan. He had failed to secure her. From the appearance of the trap it seemed as if the swan had shuffled up to her nest on her belly, after the manner of a diver, for the trap had gone off and only secured a few breast-feathers. Simeon set off on a second expedition. The first time the nest had been discovered the eggs were exposed to view, this time they were carefully covered with down. Simeon now reset the trap, this time laying it over the eggs, and carefully concealing it with the down. His hope was that the bird would remove the down with her beak and be snared by the neck. On the morrow he came back to us, however, with the four eggs and no swan; she had never returned, having apparently forsaken her nest, as we had feared she would. Simeon brought with him four ducks' nests, but the down was all mixed and the find was therefore valueless. These are some of the disappointments caused by the clumsy mismanagement of untrained men.

A cold east wind that blew all day prevented us doing much ; we went out for an hour only, and shot a few yellow-headed wagtails and a phalarope. We had plenty to interest us, however, in reading the letters and papers that had reached us from England. The steamer had arrived from Ust-Zylma the day before, bringing us tidings of home from April 4th to May 13th, inclusive. The post had reached Ust-Zylma on the 26th ; the last letters had therefore been five weeks *en route*, and so far as we know they had not been delayed in Archangel. From Ust-Zylma to Alexievka they would have taken more than another week to travel had it not been for the steamer. On the 13th of May the Consul at Archangel wrote that the ice on the Dvina was expected to break up in seven days. A letter dated the 26th described the Dvina as quite free from ice for some days past, showing that it and the Petchora broke up within a day or two of each other.

The cold north-east wind that continued blowing kept us near home, but as it also kept the mosquitoes at bay we did not complain very bitterly of it. In the face of the cutting gale we crossed over to the tundra on the following day, in search once more of the grey plovers. On the way we visited an island and took a nest of the ringed plover. Soon after landing at our destination we heard the note of the birds we were in search of, and saw two or three, but could not discover any signs of their having a nest. After our previous experience we decided to vary our tactics. Hitherto we had found the nests by sheer perseverance in searching, and had afterwards watched the female to the nest and shot her. We now decided to watch the female on to the nest in the first instance, and, having by this means found it, to secure the female afterwards as a further and more complete

identification of the eggs. It was also perfectly obvious that the extreme care we had taken not to alarm the bird was unnecessary. Our little manœuvre of walking away from the nest in a body, leaving one behind lying flat on the ground to watch, under the impression that the bird could not count beyond three, and would think that we had all gone, was clearly so much artifice wasted. The birds were evidently determined to come back to their nests in spite of our presence ; nor was there any cover to hide us if the contrary had been the case. Our care not to handle the eggs until we had secured the bird was also of no use, as we often proved afterwards. On a marshy piece of ground I shot a reeve ; and then we struck across a very likely piece of land—little flat pieces of bog with mossy ridges between. Presently Harvie-Brown, who was in front, whistled, and as I was coming up to him I saw a grey plover to my left. He called out to me that he had put up a pair near where he was standing. I soon caught sight of another bird on the ground, lifting its wings as if to attract me from its nest. It then quietly ran off, and I went to the spot, but finding nothing lay down to watch. Harvie-Brown did the same about eighty yards off. It was not long before I caught sight of both birds at some distance. One, which I at once concluded must be the male, remained in one spot, the other was running towards me, stopping on some elevation every few yards to look round. By-and-by it flew between Harvie-Brown and me, and alighted on the other side of me. The other bird soon followed, and remained as before, apparently watching the movements of the restless bird, which I now felt sure must be the female. To this latter bird I now confined my attention, and kept it within the field of my telescope for more than half an hour. It was never still for more than a minute

together ; it kept running along the ground for a few yards, ascending the ridges, looking round, and uttering its somewhat melancholy cry. It crossed and recrossed the same ridges over and over again, and finally disappeared behind a knoll about forty yards ahead of me, and was silent. I now adjusted my telescope on a tussock to bear upon the place in case I lost its position, and was just making up my mind to walk to the spot when I again heard its cry, and saw it running as before. The male was still stationary. The crossing and recrossing the ridge upon which my telescope was pointed then continued for another quarter of an hour, and at last the bird disappeared behind the same ridge as before. I gave her a quarter of an hour's grace, during which she was perfectly silent, and then sat up to see if Harvie-Brown was satisfied that she was on the nest. His point of sight was not so favourable as mine ; and, thinking I had given up the watch as hopeless, he fired off his gun as a last resource, and came up to me. As soon as he fired both birds rose almost exactly in front of the knoll upon which my telescope pointed. Upon his arrival to learn what I had made out, I told him the nest was forty or fifty yards in front of my telescope. We fixed one of our guns pointing in the same direction, so that we could easily see it. We then skirted the intervening bog, got our exact bearings from the gun, and commenced a search. In less than a minute we found the nest with four eggs. As before, it was in a depression on a ridge between two little lakes of black bog. The eggs in this, our fifth nest, were considerably incubated, which was probably the reason why the birds showed more anxiety to lure us away.

On our way back towards the river we crossed a marsh where we saw some dunlins, and secured one young one in down. On the higher part of the tundra,

nearer the water's edge, were several golden plovers : we shot one, and noticed a pair of grey plovers amongst them. The two species were quite easy to distinguish even at some distance without the help of a glass. On a piece of low tundra near the Petchora we came upon a large flock of Buffon's skuas. My companion stopped to watch the grey plovers, and I marched after the skuas. We had usually seen these birds hawking like terns over the tundra, in parties of seven or eight, and now and then we had met a pair alone on the ground. They were always wild and difficult to approach, and hitherto we had succeeded in shooting a few only. As I neared the spot where the large flock was assembled I watched them alighting on the banks near the great river. I walked towards them, and soon caught sight of a score of herring-gulls on the shore to the right. Before I had got within a hundred yards of the latter they all rose and flew towards me, the skuas also rose and followed them. I let the gulls go by and aimed at the nearest skua as soon as it came within range. Fortunately I brought it down, for in a moment I was surrounded by about 100 or 150 skuas, flying about in all directions, generally about ten of them within shot. They were very noisy, uttering a cry like "hack, hack" as they darted towards me, or screaming wildly as they flew about. This lasted about twenty minutes, during which I finished what remaining cartridges I had, some of which were dust. I missed several birds, but left seven killed and wounded on the field. My companion now joined me ; he brought down four more and a Richardson's skua ; the birds then all retired except one that kept flying from one to the other of us, every now and then making a downward swoop, like a tern, over our heads. We soon discovered the cause of its anxiety ; a young skua in down, a day or two

old, lay on the ground at our feet. Our search for nest or eggs was vain. As it was getting late, after shooting a pair of dunlins on a space of marshy ground, and a willow-grouse among some dwarf willows, we returned to our boat, resolving to renew our search for eggs of Buffon's skua and grey plover on the morrow. We turned to look towards the place of our encounter with the former: the whole flock had returned to it; they looked like great black terns on the wing as they hovered over it with their peculiar kestrel- or tern-like flight. On several occasions afterwards we observed that the skuas have many habits in common with the terns.

The north-east wind continued to blow the next day, but the sunshine was bright and warm. When evening came and the sun got low down in the horizon—for of course it never set—the wind increased and we felt it very cold. We spent our morning blowing eggs. In the afternoon we sent Cocksure on another expedition after a swan, whose nest with four eggs had been found and brought to us by one of our men. Towards four we crossed the river to the tundra. Our crazy old flat-bottomed boat could only sail with the wind dead on her stern, so we had to row with the stream for about a mile down the river, and then sail up again with the wind. By the appearance of the surrounding landscape we calculated that since we had last been on that part of the Petchora, the water must have fallen four feet at least. Some of the islands had doubled in size, and new sand-banks lay bare. We landed near a deserted house called Bugree, and soon afterwards shot a black scoter off her nest. It contained six eggs and an abundance of down and lay in a little hollow sloping towards the river, entirely concealed amongst dwarf birch. The scoter apparently does not breed on the islands, but prefers a

drier situation on the tundra, upon some sloping bank overlooking a river or a lake, and sheltered by dwarf birch or willows.

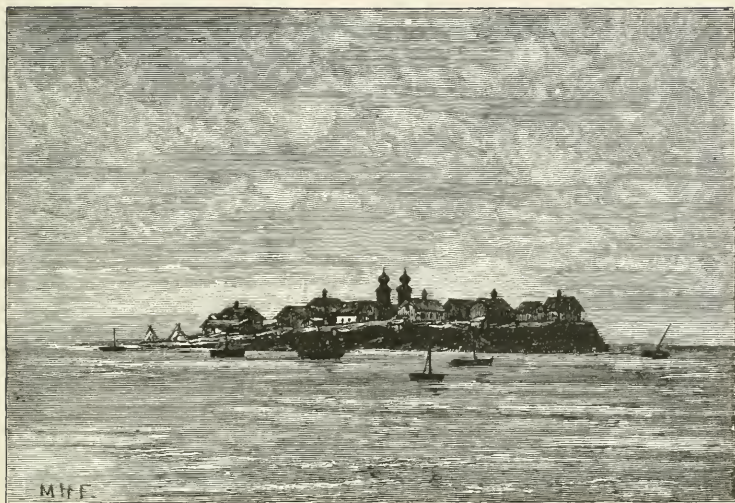
We first paid a visit to the marshy ground and saw many dunlins, Lapland buntings, and red-throated pipits; one of the latter was carrying in its bill a caterpillar at least an inch long. Our next resort was to the sandy banks, where we found a ring dotterel's nest. We then visited the Buffon's skua ground. The large flock had left, but about a dozen remained behind. We watched them for an hour, and shot one. They were mostly hawking up and down the moor, occasionally resting on the ground. Suddenly, a skua uttered its alarm note; it sounded as if we had approached too near its nest. I whistled for my companion to come, and we lay down, about 120 yards apart, for an hour. The skua did not run about on the ground, but kept uneasily flying from one spot to the other, seldom remaining long in one place. One spot, however, it visited four times, and rested longer on it than on the others. The third time it visited it I made up my mind the nest was there, and carefully adjusted my gun on a hillock to cover the spot in case I lost it. The fourth time the bird visited it, Harvie-Brown and I got up together, each followed our bearings, and in about a minute we crossed each other at the nest, in which were two eggs. The bird was near at hand, shamming lameness to attract our attention. My companion walked up to it and shot—to our disappointment and disgust, not a Buffon's, but a Richardson's skua.

After this we turned our attention to the grey plover ground. We found one of our men trying to watch one of these birds to the nest. We lay down, one fifty yards to his right, and the other as much to his left. The birds

behaved exactly as those we watched the day before. After the female had crossed and recrossed one hillock many times, and finally disappeared behind it, I made up my mind that the nest was there, and rose. My sudden appearance alarmed the male, who flew up, showing his black axillaries very distinctly in the evening sunshine as he skimmed over my head. We then all three rose, and in less than a minute met at the nest, which contained three eggs. I sat down to pack the eggs; and Harvie-Brown followed the male, who came up as we found the nest. Whilst I was packing the eggs and warming my hands, and talking "pigeon-Russ" with the man, the female came within range, and I took up my gun and shot her, thereby completing the identification of the eggs. On our return home we found that Cocksure had sent word that the swan had not revisited her nest as yet, and begged one of us to go to relieve guard. My companion accordingly, after a substantial meal, set off at midnight; meanwhile the men we employed to help us brought in the results of their day's work: a red-throated diver, trapped on the nest, with two eggs; half a dozen phalaropes' eggs, a duck's nest, containing seven large olive-grey eggs, with down which was almost black. These, they assured us, were the eggs of the *bolshaya tchornaya ootka* (the great black duck). We recognised them, however, to be the same as those our Samoyede had brought home on the 2nd, and on which he had shot a female scaup. The next take was a long-tailed duck's nest, with five eggs. Then a man came in bringing us four small nests of *malenkya petvētza* (small birds), a sedge-warbler's, a red-throated pipit's and two willow-warblers'.

The men who had collected these spoils were in the employment of the Company, to whom belong the

steamers, the yacht or cutter, everything upon the island of Alexievka, and even the island itself. The Company has a large and profitable trade in timber, which is shipped principally to Cronstadt for the Russian Government. Whether the company be Mr. Sideroff or Mr. Iconikoff, or both, or neither, remains one of those commercial secrets so common in Russia, which nobody can ever get to the bottom of. These *employés* in Alexievka were all Zyriani from Ishma, a race of people said to be of Finnish origin. Some were reported to be very rich, the proprietors of large herds of reindeer. Like the people of Ust-Zylma, they are peasants, but were described to us as being more luxurious in their living and in the furniture of their houses. They were also said not to get drunk so often as the Ust-Zylma folk, but when inebriated, not to be good-natured and obtrusively affectionate as these are prone to be, but quarrelsome and given to fighting. They have the reputation of being better workmen, and certainly beat the Ust-Zylmians hollow at birds'-nesting. In feature or size the two do not differ much; perhaps the eyes of the Zyriani are more sunken and their cheek-bones a little more prominent; and there may be a greater number of red- and yellow-haired men among them. There were several fishing encampments of these peasants in different places down the river, and we found that it was customary in the wealthier families for one son to go in summer on the tundra, with the reindeer and the Samoyede servants. The language of the Zyriani is totally different from Russian, and belongs to the agglutinative family of languages. The tribe belongs to the Orthodox Greek Church, and not to that of the Old Believers.



KUYA

CHAPTER XVIII.

STANAVIALACHTA REVISITED.

Second Visit to Stanavialachta—Peregrine Falcons—Plague of Mosquitoes—Midnight on the Tundra—Nest of the Velvet Scoter—Little Feodor sent in Qnest of the Swan's Skin—A Russian Bath—Feodor's Return—Identification of Eggs of Bewick's Swan—Mosquito Veils—Our Eighth Nest of Grey Plovers—Our Servants—Our Ninth Nest of Grey Plovers—The Tenth and Eleventh Nests.

ON the following morning, when my companion returned from his watch at the swan's nest, which had turned out a complete failure, we consulted with Piottuch as to what was to be done. The swan had evidently forsaken her nest. Time was rapidly flying, and we feared the breeding season would be over before we had obtained identified eggs of the smaller species. It did not appear as if we could do anything at Alexievka; we had evidently yet to learn how swans could be trapped at their nests on the Petchora; and we came to the conclusion

that our wisest course was to go in search of the peasant who owned the skin of the swan belonging to the two small eggs we had bought some days ago. When we last heard of him he was fishing at one of the islands in the delta which we had visited, not far from Stanavialachta, and we determined to make a second expedition to this locality. Fortunately for us, an opportunity occurred on the following day to run over to this place in the steamer belonging to the company. Outside the bar in the lagoon the cutter was cruising about with pilots to bring any ship which arrived up the river to Alexievka. The steamer had to visit this cutter to take the men a fresh stock of provisions, and we were delighted to make arrangements with Captain Engel to take us with him, to drop us at Stanavialachta, and pick us up on his return.

We left Alexievka on the 6th of July and landed at our old quarters, but learnt to our disappointment that the peasant we were in quest of had found the fishing so bad that he had given it up in disgust and returned to his native village of Mekitza, some miles north of Alexievka. We were determined to settle the question if possible; we ascertained that he had not sold the swan's skin, but had taken it with him, so we decided to send one of our men to Mekitza as soon as we returned to Alexievka. In the meantime we started for the tundra to revisit our previous shooting-grounds. We stopped a few minutes on the shore to watch a family of Samoyedes fishing with a seine-net. They seemed to be catching nothing but a small fish resembling a herring, and even these did not appear to be at all plentiful. Leaving the shore, our curiosity led us first to visit the eyries of the two pairs of peregrine falcons, at each of which we had shot one of the birds. We found that the male of the first had paired with the female of the second; a fresh lining of

feathers had been put into the latter's nest, and doubtless there would soon be eggs. The dotterels still haunted the hillsides. We shot some near each of the deserted houses—two by one, three by the other. Doubtless the right thing to have done would have been to lie down and watch the birds to their nests and to have taken the eggs. But in the first place a dotterel is very difficult to see through a mosquito-veil, and in the next to lie down and become the nucleus of a vast nebula of mosquitoes is so tormenting to the nerves that we soon chose to adopt the consolatory conclusion that the grapes were sour and not worth the trouble of reaching after ; or, in plain words, that the birds had not begun to breed, and it was no use martyring ourselves to find their eggs. The mosquitoes were simply a plague. Our hats were covered with them ; they swarmed upon our veils ; they lined with a fringe the branches of the dwarf birches and willows ; they covered the tundra with a mist. I was fortunate in the arrangement of my veil, and by dint of indiarubber boots and cavalry gauntlets I escaped many wounds ; but my companion was not so lucky. His net was perpetually transformed into a little mosquito-cage ; his leggings and knickerbockers were by no means mosquito-proof ; he had twisted a handkerchief round each hand, but this proved utterly insufficient ; had it not grown cooler on the hills, as the sun got low, he would certainly have fallen into a regular mosquito fever. We were told that this pest of mosquitoes was nothing as yet to what it would become later. "Wait a while," said our Job's comforter, "and you will not be able to see each other at twenty paces distance ; you will not be able to aim with your gun, for the moment you raise your barrel half a dozen regiments of mosquitoes will rise between you and the sight." When the coolness of evening set in we

had pretty good shooting for an hour or two; but after nine or ten o'clock we found nothing. There is very little to be met on the tundra or anywhere else at midnight, for in spite of brilliant sunshine, the birds retire to roost at the proper time and all is hushed. Our best find was the nest of a velvet scoter. We shot the female as she rose from it; there were eight eggs in it and a good supply of down. It was placed under a dwarf birch, far from any lake or water. We shot three willow-grouse



WATCHING GREY PLOVERS THROUGH A CLOUD OF MOSQUITOES

and caught three young birds in down. While we were seeking for them the male frequently flew past within easy shot, and the female ran about with head depressed and wings drooping, coming sometimes within two or three yards of us. We saw two pairs of wood sandpipers who had established themselves in a small space of marshy ground. They evidently had young, for they were continually flying round and alighting upon the willows. To search for young in down, through long grass, wearing mosquito-veils must prove a vain quest and we did not long pursue it. We caught the young of the Lapland bunting, and shot one of this year's shore-

larks, a very pretty bird. We saw a few divers, a large harrier or eagle, and on the shore of the Petchora we watched a flock of Siberian herring-gulls stealing fish from the nets of the Samoyedes, and as we went down river we came on another flock similarly employed. We saw no swans on the tundra, but they were common on the islands in the river ; one or two pairs were frequently in sight, and still there continued to fly overhead flocks of migratory ducks, always going north. All the day it had been a dead calm, but for the slight southerly breeze that had risen towards evening. The next morning a long-unfelt pleasant breath of wind was blowing down the river ; it was not enough, however, to drive back the visitation of mosquitoes that was almost making us wish for the blustering north gale back again.

Despatching little Feodor, our most intelligent man, by the steamer to Kuya, we bade him walk over to Mekitza, then ferret out the peasant and the swan's skin, and bring us home the latter. Meanwhile we spent the day blowing eggs. In the evening we took a Russian bath—an experience worth describing. We lay down upon a platform in a wooden house ; a primitive stove was in it, built of stones loosely piled one upon the other ; a hole in the side of the house with a sliding door let out the smoke. A wood-fire was kindled in the stove ; it was allowed to go out when the stones were thoroughly heated ; the steam resulting from the pouring of a glass of cold water upon them soon cleared the room of all foul air and smoke. As we lay stretched on the platform we occasionally threw water upon the hot stones, and flogged ourselves with a small broom composed of birch-twigs, still clothed with leaves ; after which we rubbed ourselves down with matting, sponged all over with cold water, and then went into another apartment to cool ourselves,

smoke a few *papyros*, and dress. The peasants frequent these bath-houses, and often walk out of the hot steam naked, the colour of boiled lobsters, to plunge into the Petchora.

The next day was one of our red-letter days. Little Feodor, our boatman, returned, bearing with him the longed-for trophy—the swan's skin. He told us he had gone to Mekitza, only to learn there that the peasant whom he sought had departed to another island to fish. Going to his house he found, however, that the man had left the skin with his wife, and she, good soul, had cut off the beak and given it to her children for a plaything. Feodor paid her a rouble for the skin, with the feet still attached to it, and got the beak into the bargain. There was no other swan's skin in the house, nor, as far as we could ascertain, was there another in the village; this one was still soft and greasy, showing the bird had been but recently killed. This, undoubtedly, was the skin of a Bewick's swan; the beak also was equally indisputable. The eggs in our possession were exactly the size one would expect a swan so much smaller than the wild swan would lay. We had every reason to believe and none to doubt that this was, indeed, the skin of the bird caught upon the nest containing the two eggs we had purchased. The chain of evidence connecting them was complete, and the identification of the eggs satisfactory. Let us recapitulate and go over the links of the narrative, the more fully to establish the conclusion we had arrived at. Two peasants are fishing together at Pyonni, an island near the mouth of the delta of the great river, twelve versts north of Stanavialachta. They find there a swan's nest, containing two eggs, and they set a trap for the bird, which they succeed in catching. In the division of spoil, one takes the eggs, the other the swan. One peasant,

wearied out by the pertinacity of the cold north-east wind, goes up stream to fish in smoother waters. On his way he stops at Alexievka, where we are, and we buy from him a number of ducks' and gulls' eggs, also two swans' eggs unusually small. As we purchase these we tell him that we shall be glad to pay the price of any swan's skin he can get us. He replies that the skin of the swan whose eggs he has just sold to us is in the possession of his partner, that the bird was trapped at the nest before they were taken out of it, adding that he has left his mate fishing on an island opposite Stanavialachta. On inquiry we find that two of our boatmen know this man, that we have seen him ourselves on the island where we found the two shoveller's eggs; we remember that he made a haul with a seine net of a small basketful of fish resembling herrings, which he presented to one of our men. We now take the first opportunity to go down to Stanavialachta and learn there that this peasant, disgusted as his comrade was by the prevalence of the cold north-east wind, has returned home to Mekitza. We send our most intelligent man to his house and get the skin.

The relative size of the two birds is very different, as may be appreciated at a glance, without the help of measurements. The bill of Bewick's swan is more than half an inch shorter than that of the larger species; the lengths of the wing, measuring from the carpal joint, are respectively $20\frac{1}{4}$ inches and $23\frac{1}{2}$; the lengths of the middle toes 5.15 and 6.1. Our eggs of Bewick's swan were about $3\frac{9}{10}$ inches long. We have eggs of other swans, doubtless of the large species, which measure $4\frac{1}{10}$, $4\frac{3}{10}$, $4\frac{4}{10}$, and $4\frac{5}{10}$ inches; these measurements make it seem probable that exceptionally large eggs of Bewick's swan might be of the same size as exceptionally

small eggs of the common wild swan. The eggs appear to vary very little in shape.

That afternoon I took a walk on the island, armed with my walking-stick gun. Birds were extremely tame. The yellow-headed wagtail seemed more abundant than ever. Reed buntings also were common. I got a shot at a swan, but the distance was a trifle too great. The weather was very hot, and the mosquitoes were swarming. Our home-made mosquito veils proved a great success; they and our cavalry gauntlets just made life bearable in these Arctic regions; still we longed for the cold winds back again to expel the plague of blood-sucking insects. Veils are necessary evils, but they interfere sadly with work, and much increase the difficulty of finding the shot birds among the long grass.

The next morning a swan's egg made us an excellent omelette for breakfast, after which I turned out for half an hour amongst the willows to shoot a few yellow-headed wagtails. They abounded on the marshy ground. I also secured two or three redpolls, some reed buntings, and a phalarope.

We set sail at noon, with a north-east wind, to visit the tundra eight or ten versts higher up the great river. For some distance before we landed the coast was very flat, with willows down to the water's edge. Amongst these dwarf trees we repeatedly heard our two especial favourites, the Petchora pipit and the Siberian chiffchaff. As soon as we got beyond the willows we landed on the tundra, and started in pursuit of a large flock of Buffon's skuas, but were soon stopped by a pair of grey plovers, which showed by their actions that we were near their nest. We lay down as before, forty or fifty yards apart, and watched the birds. They ran about, up and down,

and all around us ; and at the end of half an hour we were no wiser than at first. There was evidently something wrong. Harvie-Brown then shouted to me, "Have you marked the nest?" I replied by walking up to him and comparing notes. We then watched together for another half-hour with exactly the same result. I suggested that we must be so near the nest that the bird dare not come on, and advised that we should retreat to the next ridge, which we accordingly did. We had not done so many minutes before the female made her way on to the ridge where we had been lying. She then ran along the top of the ridge, passed the place where we had been stationed, and came down the ridge on to the flat bog towards where we then were. I whispered, "She is actually crossing over to us." Suddenly she stopped, lifted her wings and settled down on the ground. We both whispered, almost in the same breath, "She is on the nest." I added, "I saw her lift her wings as she settled on to the eggs." Harvie-Brown replied, "So did I," and added, "I can't hold out any longer against the mosquitoes." I replied, "I am perfectly satisfied ; she is within range, take her." He lifted his gun to his shoulder. She ran off the nest to the top of the ridge and stood there until my companion shot her. We then walked up to the nest, the first we had seen on the flat. The eggs were quite fresh, or nearly so ; and the nest must have been made nearly a fortnight later than those we had previously taken. During that time the bogs had become much drier, so that we could cross them without much difficulty ; and this was probably the reason why this nest was placed lower down. The eggs had all the appearance of a second laying, being less blotched than usual, one of them remarkably so. It is worth noticing that whilst we were watching in our first position, very near the nest,

the birds were almost quite silent, and did not call to each other as they usually do.

After carefully packing the eggs, we walked on, and speedily started another pair. This time we lay down together, as nearly as we could tell, on the spot from which the birds rose, which seems to be generally from forty to fifty yards from the nest. The clouds of mosquitoes formed such a mist on the tundra that we had some difficulty in marking our birds; but by raking the horizon with our binoculars and getting well bitten through our veils in the process, we soon found the female, and watched her to a ridge just opposite to us. She soon settled down; and within a quarter of an hour after we had lain down we were both perfectly satisfied that she was on the nest. We gave her a few minutes grace, and then walked up to the nest, without making any effort to shoot the bird, having perfectly identified her, and being almost tired out by the mosquitoes. The eggs in this nest were considerably incubated. The nest was placed, as before, in a hollow on a ridge. The ground on this ridge was not so mossy as usual, and there was much bare brown turf to be seen. Whether this had anything to do with the colour of the eggs it is difficult to say; but the fact is that these eggs are quite brown in ground-colour.

It was very late, or rather very early morning when we returned to our quarters, and we had to spend an hour slaughtering mosquitoes before we could make the room habitable; then we had our dinners to cook and our pipes to smoke before we could retire to rest. At noon I turned out of my hammock and spent the day indoors. The wind was north-west, and there were continual hints of rain. Our men were tired after the long row the day before. They were not in good condition, nor could it

be expected they should be. They had now reached the last day of a four weeks' fast, during which they were supposed to eat nothing but bread and water, with fish if they could get it. During the period of probation it was intensely ludicrous to watch the expression on our steersman's face when he held up as many fingers as there still remained days of fasting to be gone through, opening his mouth wide the while, then grinning all over as he said, "Moi skaffum." "Skaffum" is pigeon-English for "eat," derived, we were told, from the Swedish (*skaffa*, to provide).* This fellow's name was Feodor; he was a good-natured simpleton, indescribably lazy and always thinking of his stomach—we had nicknamed him "Moi skaffum." Gavriel, our other Russian, was not very much sharper, but was by no means lazy when directed in his work, though he had not the sense to discover for himself what wanted doing. Our half-bred Samoyede, also called Feodor,—Malenki Feodor we dubbed him—was a sharp, active lad, always finding out something to do; with a little training, indeed, he would have made an excellent servant. He learnt while with us to skin birds well, and was by this time a fair nester. Simeon, our thorough-bred Samoyede, was a philosopher—stolid, phlegmatic, and a good worker. He was our birds'-nester *par excellence*. He knew the tundra well and the birds upon it; for three years he had lived in Varandai, and in his palmier days had reindeer of his own. Nothing moved Simeon; success did not elate him, nor failure depress him. He would take the extra rouble we always gave him when he brought us a rare bird's nest as a matter of course, without a "thank you." And when, as we witnessed once, he steadied the boat for a drunken

* The universal *skoff* (= "food" and "to eat") of the British sailor seems a more probable derivation.—ED.

German captain, who brutally trod upon his hand, evidently thinking it a fine thing to show his contempt for the poor Samoyede, Simeon equally took the insult as a matter of course, did not offer to withdraw his hand nor move a muscle of his face. If Simeon had any hot blood in him, the veins of it must have run very deep under his sallow skin.

The next day I did not do much either, but Cocksure being out of birds, I turned out amongst the mosquitoes and got him a few. I shot several yellow-headed wag-tails, which were as abundant as ever, and also three Terek sandpipers, the first we had secured, although we had occasionally heard their notes on the island. A nest of shoveller's eggs, quite fresh, was brought to us during the day.

Our ninth nest of the grey plover we took on the 12th of July. A stiff warm gale from the east, with occasionally a smart shower of rain, kept the air clear of mosquitoes in the morning. In the afternoon the wind fell, and the mosquitoes were as bad as ever; but we were too busy to heed them much. At eleven we crossed to the tundra. We soon came upon a pair of grey plovers, which rose a couple of hundred yards ahead of us, their wings glittering in a gleam of sunshine after a smart shower. These birds have frequently a very curious flight as they rise from the nest, tossing their wings up in the air, reminding one somewhat of the actions of a tumbler pigeon. We lay down as near as we could to the spot from which they rose, and were somewhat puzzled at their behaviour. The male seemed equally, if not more anxious than the female, running about as much as she did, continually crying, and often coming very near us, and trying to attract our attention by pretending to be lame. The female rarely uttered a note.

We suppose this must have been because one of us was too near the nest. Harvie-Brown moved his post of observation after we had spent some time without being able to discover anything ; and then the female behaved as usual, and I soon marked the position of the nest. We walked straight up to it, and found the four eggs chipped ready for hatching. We had no difficulty in shooting both birds, and afterwards hatched out two of the eggs, obtaining a couple of good specimens of young in down. With a little practice this mode of finding birds' nests becomes almost a certainty. One has first to be quite sure which is the male and which is the female. When the birds are near enough, and one can compare them together, the greater blackness of the breast of the male is sufficient to distinguish him ; but we found that the females varied considerably in this respect, and that it was better to notice the habits of the birds. The female generally comes first to the nest, but she comes less conspicuously. She generally makes her appearance at a considerable distance, on some ridge of mossy land. When she has looked round, she runs quickly to the next ridge, and looks round again, generally calling to the male with a single note. The male seldom replies ; but when he does so it is generally with a double note. When the female has stopped and looked round many times, then the male thinks it worth while to move ; but more often than not he joins the female by flying up to her. The female very seldom takes wing. She is very cautious, and, if she is not satisfied that all is safe, will pass and repass the nest several times before she finally settles upon it. The female rarely remains at one post of observation long ; but the male often remains for ten minutes or more upon one tussock of a ridge, watching the movements of the female.

We walked some distance before we came upon a second pair ; but at length we heard the well-known cry, and got into position. We spent nearly two hours over this nest, and were quite at sea at the end of the time. We changed our position several times, but to no purpose. The female went here and there and everywhere, as much as to say, "I'm not going on to the nest as long as you are so near." By-and-by the mosquitoes fairly tired us out, and we gave up the watching game and commenced a search. At last we found out the secret of the bird's behaviour. We picked up some broken egg-shells, and concluded at once that the bird had young. We tried to find them, but in vain. These two hours, however, were not wasted. The birds came nearer to me than they had ever done before. I often watched them at a distance of not more than ten yards, and was able to hear their notes more distinctly. The note most frequently used is a single plaintive whistle, *köp*, long drawn out, the *ö* pronounced as in German, and the consonants scarcely sounded. This I am almost sure is the alarm-note. It is principally uttered by the female when she stops and looks round and sees something of which she disapproves. If the male shows any anxiety about the nest, which he seems to do more and more as incubation progresses, he also utters the same note. The double note, *kl-ee* or *kleep*—the *kl* dwelt upon so as to give it the value of a separate syllable—is also uttered by both birds. It is evidently their call-note. I have seen the female, when she has been running away from the male, turn sharp round and look towards him when he has uttered this note, exactly as any one might do who heard his name called. Whilst we were watching this pair of birds a couple of other grey plovers came up, and called as they flew past. The male answered the call and flew towards

them. On the wing this whistle is lengthened out to three notes. I had some difficulty in catching this note exactly. It is not so often uttered as the two others I have mentioned, and is generally heard when you least expect it; but I am almost sure it is a combination of the alarm-note with the call-note—*kl-ee-köp*. If I wanted to make a free translation from Ploverski into English I should say that *kl-ee* means "Hallo! old fellow," and *köp* means "Mind what you are about!"

We procured our tenth nest of the grey plover the same afternoon. It was found by our Samoyede, who brought us three eggs and the male and female shot at the nest. He accidentally broke the fourth egg. As it contained a live young bird, we placed these three eggs in our hatching basket, where we had made a snug nest of bean-goose-down.

By this time we were pretty well tired with tramping the tundra. The ceaseless persecution of the mosquitoes, and the stifling feeling caused by having to wear a veil with the thermometer above summer heat, had taxed our powers of endurance almost to the utmost; and we turned our faces resolutely towards our boat; but a most anxious pair of grey plovers were too great an attraction to us to be resisted. We watched them for some time, during which a pair of ringed plovers persisted in obtruding themselves impertinently between us and the objects of our attention. This pair of grey plovers also puzzled us, and we concluded that they possibly had young, and consequently we gave up the search. We had each marked a place where we thought a nest might be; and we each of us went to satisfy ourselves that it was not there. The two places were about fifty yards apart. The birds first went up to Harvie-Brown and tried to draw him away by flying about and feigning lameness.

Then they came to me and did the same. They were so demonstrative that I felt perfectly certain of finding the nest, and shot at the female. She dropped in the middle of a wet bog. I then shot the male, walked up to him, and left him with my basket and gun to struggle through the bog to pick up the female. Before I got up to her, I saw her lying on the turf on her breast with her wings slightly expanded. I was just preparing to stoop to pick

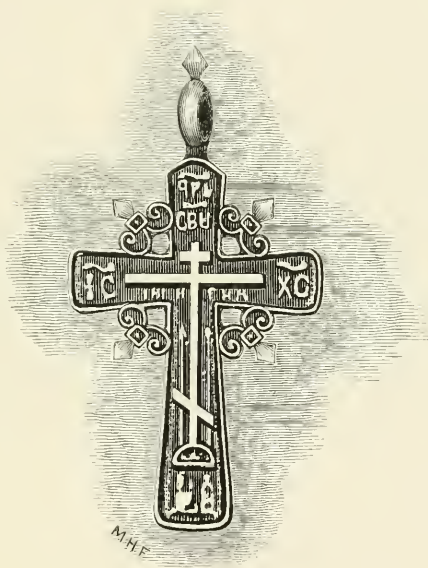


MOSQUITO VEIL

her up, when she rose and flew away, apparently unhurt. I must have missed her altogether, as she was evidently only shamming to draw me away. I returned to search for the nest, and was unable to find it. Whilst I was looking for it Harvie-Brown came up; so I gave up the search, and we again turned towards the boat. When we had got about halfway towards the spot where Harvie-Brown had been looking, I caught sight of a young grey plover in down, almost at my feet. Stooping to pick it up, I saw the nest with three eggs not a yard from me.

This was the last and eleventh nest of these rare birds which we found. The young in down are very yellow, speckled with black, and are admirably adapted for concealment upon the yellow-green moss on the edges of the little bogs, close to which the grey plover seems always to choose a place for its nest.

Our attempt to hatch the highly incubated eggs, and thus obtain specimens of young in down, was successful. We soon had five young grey plovers well and hearty, and secured three or four more afterwards.



OLD RUSSIAN SILVER CROSS



LITTLE STINT'S NEST, EGGS AND YOUNG

CHAPTER XIX.

THE GOLIEVSKI ISLANDS.

Trip to the Golievski Islands—Shoal of White Whales—Glaucous Gull—Dunlins and Sanderlings—Black Scoter—Dvoynik—Little Stint—Curlew Sandpiper—Snow Bunting—Overhauling our Plunder—The Company's Manager—Discussions concerning the Stints—Probable Lines of Migration followed by Birds.

ON the 13th of July an opportunity presented itself of visiting the Golievski Islands at the entrance of the

lagoon. These islands are little more than sandbanks, and the beacons erected upon them for the guidance of vessels entering the river are washed away every spring by the ice. To re-erect these beacons and to inspect others on various promontories on the shores of the lagoon, the steamer makes a trip every July. Captain Engel asked us to accompany him, and we gladly accepted the invitation.

Passing Stanavialachta and Cape Bolvanski, we sailed almost due north to the bar, where the lead announced scarcely thirteen feet of water. We then steered nearly east to within three miles of the shore, whence we afterwards kept in a north-easterly direction. A few miles after passing Cape Constantinovka we altered our course to north, and made Island No. 4 about midnight. Off Cape Constantinovka we came upon a shoal of white whales or beluga, which played like porpoises round the steamer.

We stayed a couple of hours on Island No. 4, erecting the beacon upon it. The night was foggy at intervals, but the midnight sun shone bright. The island is a flat desert of sand, unrelieved by a blade of grass. It may be a couple of square miles in extent in the summer time, and is not much affected by the tide, which rises only four or six inches. We found a large flock of glaucous gulls upon it, but we could only discover two nests. They were heaps of sand, hollowed slightly at the apex and lined with some irregularly disposed tufts of seaweed. The young in down were running about on the flat sand-bank. We secured half a dozen and shot four old birds. The young were less spotted than those of most gulls; the old birds were pure white, with delicate, dove-coloured mantles, paler than those of our herring-gull. The legs and feet were pale flesh-tinted pink; the beak and the line round the eye were straw-yellow. The

point of the beak was horn-colour, with the usual dark vermilion spot on the angle of the lower mandible. The pupils of the eye were blue-black, and the irides very pale straw-yellow. The interior of the mouth was of the same colour as the legs and feet. The birds to whom the two nests belonged were easily shot; they made repeated downward darts upon us like terns. The rest of the flock kept well out of range, soon settling down at a point on the extreme end of the island, and, on being fired at there, flew right away. Among these glaucous gulls were two immature birds and, one or two Siberian herring-gulls. After the dispersion of the flock that had engaged all our attention, we began to notice the presence of small parties of sandpipers feeding about the island. They were very wild, running about on the low, wet sandbanks which rose hardly a couple of feet above high-tide level, and about the margins of the little pools in the lower parts of the island. Among them were some dunlins; we succeeded in shooting a couple of these, and one or two sanderlings. These birds were peculiarly interesting to us. We had scarcely hoped to come across them. We saw no evidence, however, of their breeding upon the island; they seem to have settled upon it merely to feed. The only nests we found were those of the glaucous gull. The shores of the island were devoid of all material for nest-building, except sand and a very slight quantity of seaweed. A few whelks, some broken mussels, and other bivalves lay sparingly scattered about; with here and there a few pieces of driftwood, and near the south shore the decaying body of a seal, probably the harp seal.

At two o'clock we returned on board, and after a couple of hours' sleep, we woke to find ourselves lying at anchor in a thick fog that completely hid Island No. 3 from us. The sun, however, was shining brilliantly over-

head. After an early breakfast we watched the fog lifting, and gradually we caught sight of the island, over which a flock of thousands of black ducks was whirling and circling. This island we computed to be some eight or ten miles in length. It appeared to be exactly the same sandy desert as Island No. 4, but we were told that some persons who had visited it declare that grass grows upon it. Unluckily for us its beacon had not been carried off, only laid upon its side by the ice, so that in an hour's time it was repaired and set up on its legs again and all hands ordered back on board. Near it lay another dead seal, apparently the common one, in a condition described by Cocksure as having "beaucoup d'aroma." A few herring and glaucous gulls were upon the island, and we found two empty nests; but what interested us most was the presence of large parties of dunlins and small flocks of sanderlings. Numbers of black ducks continually passed like clouds overhead. The large flocks did not come near enough for identification, but we made out among smaller ones the long-tailed duck and the black scoter, and were inclined to think that the large flocks were composed of the latter species.

At eight o'clock we had a more substantial breakfast than that partaken of in the earlier hours, and then went to lie down on sofas in the cabin. All day we drifted down a sea almost as smooth as a mirror; not a breath of wind stirred during the night or day. We had also left the mosquitoes behind, and only saw one or two after leaving the delta of the Petchora. The steamer returned to No. 4 Island as we slept to get into the right course and deposit a "carabas" on the William Bank, and a long pole (with a besom on the top and a stone at the foot) upon the Alexander Bank.

We commenced our next day at 4 P.M. It was a very

short one, but it proved very eventful. After a refreshing wash and a promenade on deck for half an hour, we dined and smoked a pipe. By that time the boats were ready, and we went on shore a couple of versts south of the river Dvoynik, there to erect another beacon, which we were afterwards told the Samoyedes had pulled down.

Harvie-Brown and I struck off at once for the tundra in the direction of the Pytkoff Mts. (580 feet high), about fifteen miles distant. The tundra was very flat, and we soon came upon ground exactly similar in character to that tenanted by the grey plovers near Alexievka. We had not walked far when we heard the well-known cry, and there rose four grey plovers. My companion soon after met with another pair and lay down to watch them. We parted company here, and I heard later that, feeling ill—the effect probably of irregular meals and sleep—he soon after returned to the ship, having met with nothing of interest, except the grey plovers and a few Buffon's and Richardson's skuas, and also picking up the feathers of a snowy owl.

After leaving him I went on for about a quarter of an hour, then finding the tundra "flat, stale, and unprofitable," I turned sharp to the north, towards what I took to be a large lake, but which in the maps is set down to be a bay of the sea. *En route* I saw nothing but an occasional Lapland bunting or red-throated pipit. Arrived at the water's edge, however, I spent an interesting hour. A large flock of sandpipers were flying up and down the banks. They looked very small and very red, and in order to watch them I hid amongst some dwarf willows, teeming with mosquitoes. I did not heed their bites, for my hopes and doubts and fears made me for the time mosquito-proof. Presently some birds swirled past, and I gave them a charge of No. 8. Three

fell—three Little stints—the real Simon Pure at last. I now waited a few minutes, and soon heard their notes again. This time a small flock passed me over the water, and I dropped a couple into it. I endeavoured to wade in after them, but the mud was too much for me; a smart north wind was blowing also, so I turned back and waited on the shore; there I spent the time examining every dunlin that came within the range of my glass in the hopes of discovering one without a black belly. After a while I walked on, not caring to shoot more, but desirous of finding some evidence of the Little stint's breeding haunts. At a short distance before me rose sandhills sprinkled over with a sort of esparto grass, and towards these I now walked. The intervening ground was covered with thick, short, coarse grass, and was studded with little pools of water. I had not gone far before I came upon some sandpipers feeding on the edge of a small island in the bay. There was no kind of cover near; so approaching as close as I dared, I fired. There must have been six or seven birds; all rose but one, who tried to follow the rest, but was wounded, and he dropped into the water, fluttering feebly on till he reached another island. The mud on the banks was so deep and sticky that it was with difficulty I again got within range, and with a second shot laid him upon his back. When I managed to reach him, my pleasure was great on picking him up to find a curlew sandpiper. This was the single specimen of the species that we obtained on our journey. I now hastened on to the sandhills. The mosquitoes had by this time forced me to wear my veil, but when on reaching the hills I saw a number of small waders running hither and thither, I threw it back; still I could detect nothing but ringed plovers. I shot one to be certain of my identification, and hoping also that the report would

rouse rarer game. A shore-lark in first plumage was the only other bird that rose at the sound. I secured it. Wandering on farther I was still disappointed. Beds of wild onion and large patches of purple vetch had replaced the coarse grass. I returned on my footsteps to the edge of the bay, and missed a shot at a swan; a snowy owl also flew past out of range. The curlew sandpipers had disappeared. The flock of Little stints was still there, but I left them to follow a snow-bunting, the first I had seen since leaving Ust-Zylma. I shot it. Then to my consternation I discovered through my glass that the last man had left the beacon, and that I must return. A pair of black-throated divers were sailing about the bay, one or two herring-gulls were flying about, but my time was up. I was a good mile from the ship, so turning by the sandhills I made my way to the beacon, bagging a fine male grey plover as I went. As soon as I got on board we started for Alexievka.

My wonderful success at the last moment determined us by some means or other to return to this land teeming with rare birds. We marked, as we steamed along, that the sandhills continued on the north side of the river Dvoynik as far as Cape Constantinovka. It was probable that the breeding-ground of the Little stints might be found on these coasts or on the mountains. Those I had seen might be last year's birds, not breeding this year, but haunting the neighbourhood of the older ones, as is the case with the flocks of dunlins. It was tantalising to have to hurry away from what seemed the Promised Land, and as we looked at the old washing-tub that usually carried us on our trips to the tundra, and knew that for its life it could not dare cross Bolvanskaya Bay, we felt inclined to parody Richard III.'s cry, and exclaim aloud, "A boat! a boat! my kingdom for a boat!"

Our young grey plovers in down, when we visited them, we found thriving. There were five small birds in excellent condition.

The five sanderlings that we had shot on the islands were three males and two females. The testes of the former were small, the latter had eggs about the size of a pin's head. Both males and females showed signs of moult; they had some bare places almost like sitting-spots, but no recent ones.

The curlew sandpiper turned out to be a female, with very small eggs, and showed no signs of having been breeding this year.

The five Little stints in our possession proved to be all males. Temminck's stints were very common at Alexievka. They were breeding abundantly: sometimes we found them in single pairs, sometimes almost in colonies, but we had never met with flocks of these birds since leaving the neighbourhood of Habariki. Those that we had come upon afterwards had never failed to show us by their ways that we were intruding upon their breeding quarters. When Harvie-Brown visited Archangel in 1872 he found Temminck's stints breeding on one of the islands of the delta of the Dvina. This was probably not far from the southern limit of their breeding range. He also continually observed this species in other localities, congregating in small flocks together, and evidently not breeding. These might have been the birds of the preceding year. If, as it is pretty well established, few sandpipers breed until the second year, and the young birds flock, during their first summer, somewhere near the southern limit of the breeding-stations, it might also be augured that the Little stints I had seen were probably breeding at no great distance from the spot I had visited the previous day. The

thought of the probable vicinity of the nests, the discovery of which had been one of the strong motives of our journey, excited us so much that we did not go to bed, but spent the night plotting and planning the possibilities of getting to Dvoïnik again. There were difficulties in the way. Unluckily for us the company's manager was a very impracticable man. It was his first year in office ; he was young, inexperienced, and comparatively uneducated. For the nonce he was absolute monarch of Alexievka, and the absoluteness of his power was too much for him. A German from Revel, he had yet so much of the Russian in him that, when scratched, the Tartar would out. He was very unpopular, and one glimpse behind the scenes revealed to us rebellion "looming in the distance." There were allowances to be made for the man. No gentleman would come to such a place as Alexievka, or face the existing muddle, for the sake of the miserable pay "*la pauvre compagnie*," as Cocksure calls it, gives. The Provalychik had a plentiful crop of cares under his crown. So far as we could see he was plotting and being plotted against. He was not backed up by the Bureau at St. Petersburg. His domestic affairs looked ugly, and amongst his subordinates he had scarcely one reliable man he could trust. The whole situation was a specimen of what the Germans call "*Russische Wirthschaft*." We knew the man could render us an invaluable service without exposing the company to the slightest loss, but as yet we had not been able to make him see with our eyes. We longed for the arrival of Sideroff, fearing, however, he would come too late. Meanwhile we tried to work the oracle, and had not yet given up the task in despair.

Whether the birds that I had seen in flocks on the tundra were those of the year before or not continued a

matter of discussion between my companion and myself. He considered that maritime birds that feed principally when the tide falls, have consequently a periodical dining-hour and a special dining-room, and therefore get into the habit of flocking together at dinner-time. I remained still of the opinion that birds of the same species were breeding not far off, probably on the coast between Bolvanskaya Bay and Varandai, or it might be on the Pytkoff mountains. We had also many debates concerning the probable line of migration followed by the grey plover, the Little stint, the curlew sandpiper, and the sanderling; and in this we began to question the usually received theory that these birds migrate up the Baltic and along the coast of Norway to their breeding haunts. My own notion had long been that birds migrate *against* the prevailing winds; that they migrate *to* their breeding-ground in a narrow stream, returning from them in a broad one. If these birds, therefore, winter on the shores of the Mediterranean, they probably leave by way of the Black Sea, cross by the Sea of Azov to the Volga near Sarepta, follow the Volga to Kasan, thence along the Kama to Perm, then over the low hills of the Ural to the Ob, and so on to the Arctic Ocean. Some breed near the mouth of the Ob, others on the eastern or the western coast. The stragglers who wander off as far as Archangel and the North Cape may be barren birds with nothing else to do.

After starting this hypothesis we bethought ourselves that we had with us a list of the birds of Kasan, in a book lent to us by M. Znaminski. These chapters are headed "Materials for making a Biography of the Birds of the Volga," and the work itself is entitled, "Descriptive Catalogues of the High School of the Imperial University at Kasan," edited by MM. Kovalevski, Levakovski,

Golovinski, and Bogdanoff; published at Kasan in 1871. From this book Cocksure drew for us the following information :—

“ *Little and Temminck's stints* are seen in flocks during the first fortnight in May on the Volga, from Simbirsk to Kasan, and on the Kama as far as Uffa. They are not seen during the summer, but are found again at Simbirsk in the middle of August.

“ *Curlew sandpipers* are seen in Kasan in spring and autumn only, both on the Volga and Kama.

“ *Sanderlings* are seen in autumn at Kasan, and have been seen in spring on the Sarpa.

“ *Grey plovers* are seen in small flocks in May and September near Kasan, but are not to be met with every year.

“ *Yellow-headed wagtails* arrive at Kasan with the common species, viz., middle of April; a few pairs are seen until the beginning of June.”

These extracts prove that part of the migration of these species takes place across country; but probably the main stream follows the coast, especially in autumn, as I was myself an eye-witness, the year after my return from the Petchora, on the island of Heligoland.



THE LIGHTHOUSE AT
HELIGOLAND ON
A MIGRATION NIGHT

CHAPTER XX.

THE MIGRATION OF BIRDS.

Hybernation of Birds—Migration of Birds—Reed-warblers—Origin of Migration—Transvaal Warblers—The Mammoth Age—Insect Life—Lines of Migration—Heligoland and its Ornithologists—Variety of Birds—Wind and Weather—The Throstle-bushes—Migration by Sight—Order of Migration—Stray Migrants—The Yellow-browed Warbler—Migration on Heligoland—Skylarks—Migratory Instincts—Other Facts of Migration.

It is very difficult to realise the fact that no longer ago than towards the close of the last century the belief in the hybernation of swallows was held by many ornithologists. That certain species of mammals spend the winter in a torpid state is proved beyond all possibility of doubt ; but there is no evidence of the hybernation of any species of birds. Never was theory founded on more flimsy substratum of supposed facts, or supported by weaker logical argument. Swallows made their appearance in

spring, no one knew how or whence. During the summer they were remarkable for being almost constantly on the wing, but late in the autumn a noticeable change took place in their habits. They were observed more and more to congregate in large flocks, and towards evening to perch in numbers on houses, and frequently in trees. Finally they collected in thousands on the reeds and willows on the banks of the Thames, and disappeared during the night. In the morning not a swallow was to be seen, and ornithologists came to the startling conclusion that they had plunged into the dark waters of the river, and buried themselves in the mud at its bottom, to reappear the following spring, refreshed by their winter's sleep. And this theory was gravely accepted as one among many other unfathomable secrets of Nature! After a time it was, however, discovered that the disappearance of many of the summer resident birds from their breeding-grounds in this country was the signal for their appearance in some parts of Southern Europe or Northern Africa, and the theory of migration was accepted as resting upon a basis of indisputable fact when birds were seen in the act of migrating. At certain stations, such as Gibraltar and Malta, and notably on the island of Heligoland (all, curiously enough, under British rule), birds were seen passing over, not in small flocks only, but by thousands and tens of thousands, so that no possible doubt could remain as to the great fact of migration. The periodical disappearance of the swallow remained, however, almost as great a mystery as before. The impulse of migration was called an instinct, but did not the less remain an unfathomable secret of Nature, and the only cause that could be assigned for it was that it must have been originally implanted in certain species at their creation and denied to others.

The discoveries of Darwin and Wallace have placed the facts of migration in an entirely new light, and added a new interest to a subject which has always been one of the most fascinating departments of ornithology. The origin of the habit of migration is still involved in much mystery. It is probably a fact in the history of birds of comparatively modern date. It is not confined to any one geographical region, nor to any one family of birds, nor can we assume that it will be present or absent in every species of the same genus. The birds of the Nearctic region are as migratory as those of the Palæarctic. Many birds visit South America and Australia only during the breeding-season. If we include as birds of the tropical regions those species which visit them after having bred in the cooler regions, they will also contain a considerable proportion of migrants, even though no bird migrates there to breed. We may lay it down as a law, to which there is probably no exception, that every bird breeds in the coldest regions of its migrations. No bird migrates to the tropics to breed because there is no hotter region for it to migrate from. The stories of birds breeding a second time in the place of their winter migration probably have the same scientific value as the stories of swallows having been found hibernating in caves and hollow trees, or of toads having been found in the recesses of otherwise solid rocks.

Many birds, such as the robin, the blackbird, and others, which are for the most part resident in England, are migratory in Germany. There is every probability that it is only within comparatively recent times that these birds have ceased to migrate in England, and we may fairly conjecture that, should the English climate remain long enough favourable to the winter residence of these birds, they will develop into local races, which

will eventually have rounder and shorter wings than their continental allies.

In some genera of birds it is comparatively easy to determine the geographical range from an examination of the shape of the wing. In the genus *Acrocephalus*, or reed-warblers, for example, *A. turdoides* is noticeable for its very pointed wing. Its migrations extend from South Sweden to the Transvaal. *A. orientalis*, again, is scarcely distinguishable except in having a slightly less pointed wing. Its migrations extend from Japan to Borneo. *A. stentoreus* has a decidedly more rounded wing, and the limits of its migrations are from Turkestan to India; whilst *A. syrinx* has the roundest wing of all, and appears to have become a resident in the island of Ponape. In the smaller species of the genus the fact is equally striking. The sharp-winged *A. schænobaenus* ranges from the Arctic Circle to South Africa, whilst the more rounded-winged *A. dumetorum* and *A. baticatus* have very limited ranges.

There is a considerable difference of opinion as to the origin of migration, some ornithologists holding that the original home of a species was its winter quarters; others supposing that before the instinct of migration was formed the species was a resident in the district where it now breeds. Both views have their difficulties; but the preponderance of evidence seems to me to be largely on the side of the latter theory. In turning over a box of Transvaal skins, shot during the breeding season between September and March, it seems impossible to come to any other conclusion. Throwing aside the brilliant birds of the district, we shall find, especially if the box comes from Potchefstroom, a variety of reed-warblers and allied birds, which speak of swamps abounding with insects, where birds of this kind delight to breed and find

unlimited food. As a matter of fact most of these birds do breed there, and, because the winter is so mild, remain there all the year round. But mixed up with these African types we shall find a fair sprinkling of our own reed-warblers, who have gone down there to avoid our cold winters. These birds are not breeding; they have migrated to the Transvaal to enjoy the mosquitoes of the Potchefstroom swamps, and when the Potchefstroom birds have finished breeding and begin their six months rest from family cares, they will some of them migrate to the Arctic regions of North Europe to breed amongst the mosquitoes which swarm on the river-banks on the outskirts of the tundra. We can scarcely conceive it possible that these species were ever resident birds in the Transvaal. It seems much more rational to conclude that they were once resident birds in the subarctic regions of Europe, and now by the change in the winter temperature of their original home have come to South Africa as migrants, apparently out of season in regard to their breeding habits, to mix amongst birds, many of whom are closely allied to, if not congeneric with, themselves. The cause of migration is want of *food*, not want of *warmth*. The feathers of a Siberian jay or a Lapp tit are proof against any cold.

Admitting that the various species of birds that breed in countless thousands in the Arctic regions were once residents there in the days when the climate was much warmer than it is now, we still find some difficulties to explain. In the first place, the Mammoth age does not appear to have been so very much warmer than the present. It is said that the remains of the foliage of conifers, such as now exist in Siberia, have been found in the stomachs of frozen mammoths. In the second place, the question may be fairly asked: How about the

three months' night? Would that be no bar to the wintering of so many birds in the Arctic regions? But are we sure that there was three months night? May it not be possible that the obliquity of the earth's axis to its orbit was much less in those ages, and that this was one cause of the comparative mildness of the winters, whilst the summers were for the same reason cool enough for the growth of conifers? An increase in the obliquity of the earth's axis would possibly account for the glacial period which destroyed the mammoths and compelled the birds to migrate.

It is alleged that many birds leave their winter quarters because in southern climates the heat dries up everything, and lessens the production of insect life. Many of our European birds winter on both shores of the Mediterranean. In wandering through the valleys of Asia Minor, or the mountain-gorges of the Parnassus, or on the islands in the lagoon of Missolonghi, in May and June, I noticed no absence of insect life. On the contrary, insect life appeared to be superabundant. Vegetable life appeared to be threatened by innumerable grasshoppers. One of the prominent features of the district was the countless thousands of beetles which swarmed on every plant; and, if we may judge from the number and size of their webs, the countries I have named must be a perfect paradise for spiders. That these districts are suitable for the maintenance of insectivorous birds during summer is proved by the fact that soon after the *Phylloscopi* which have wintered there have left, their place is filled with birds belonging to the allied genus *Hypolais*, so that the olive-trees are well supplied with insect-eating birds both winter and summer. One species of swallow winters in Greece, one is found there all the year round, and three other species are

summer migrants to that country. In some cases no doubt the weaker birds are turned out by the stronger. Swallows arrive in Düsseldorf early in April. For some weeks they circle over the town, like a swarm of bees. Early in May the swifts arrive, and soon become as abundant as the swallows were, whilst the latter birds are rarely seen during the summer.

Too much has probably been made of the great lines of migration, the highways which lead from the summer to the winter quarters.* It has been asserted that there is a connection between these routes and the position of submerged continents across which the birds migrated in past ages. Probably there is some such connection, but in all probability an accidental one. To prove the case it would be necessary to show that migratory birds chose a longer route across a shallow sea in preference to a shorter route across a deep sea. It would be necessary also to prove that the habit of migration is older than the subsidence of the submerged land.

I venture to think that the *modus operandi* of migration has been to a large extent misunderstood. Few birds migrate by day. By far the greater number of species migrate by night. The number of places where nocturnal migrations can be systematically observed is very small. Two circumstances are requisite to make such observations successful. First, a sufficiently large population sufficiently interested in the event to permit no nocturnal migration to pass undiscovered. Second, a sufficiently intelligent naturalist to record the sum of many years' observation. Probably in no place in the world are these desiderata so exactly fulfilled as upon the

* This and the following paragraphs have been left intact, but how much Mr. Seebohm was afterwards led to modify his views on the subject of migration may be seen by reference to page 418 in Part II. of this volume.—ED.

island of Heligoland. Soon after my return from the valley of the Petchora, Mr. Gätke, the celebrated ornithologist and artist, who resided for so many years on Heligoland, invited me to visit the island, to renew the acquaintance of the grey plover, the Little stint, the blue-throat, the shore-lark, the little bunting, and others of my Petchora friends, and to see something of the wonderful stream of migration which sets in every autumn from the Arctic regions to the sunny South, and flows abundantly past the island. Heligoland is a very small place, probably not much more than a hundred acres in extent. It is an isolated triangular table of red sandstone, with perpendicular cliffs two or three hundred feet in height, dropping into a sea so shallow, that at low water you can scramble round the island at the foot of the cliffs. Most of the surface of this rock is covered with rich soil and grass. About a mile from the island is a sandbank, the highest portion covered over with esparto grass, and the lower portions submerged by the sea at high tide, reducing the island from perhaps fifty acres to twenty-five. The resident birds on Heligoland and Sandy Island probably do not exceed a dozen species; but in spring and autumn the number of birds that use these islands as a resting-place during migration is so large, that as many as 15,000 larks have been known to have been caught there in one night, and the number of species of birds obtained on these two small plots of land equals, if it does not exceed, that of any country of Europe. There are several species of Siberian and American birds which have never been obtained in any part of Europe except upon the island of Heligoland. The list of Heligoland birds is so varied, that many ornithologists have doubted its accuracy. No one can visit the island, however, without being convinced of the *bona fides* of all

concerned. The authenticity of the Heligoland skins is beyond all possible question. During the time I spent on the island, from the 23rd of September to the 18th of October, I either shot or saw in the flesh such a variety of birds that I could almost agree with my friend Mr. Gätke when he stated that he would willingly exchange his collection of rare birds shot in Heligoland for those which had passed over the island without being obtained. It is probable, however, that the latter bear a much smaller proportion to the former in Heligoland than in any other place.

The fact is that this little island is the only part of the world of which the ornithology has been properly worked. Every little boy in the island is a born and bred ornithologist. Every unfortunate bird which visits the island has to run the gauntlet of about forty guns, to say nothing of scores of blowpipes and catapults. The flight and note of every bird is familiar to every islander. Each bird has its own local name in the Heligoland language. A new bird is instantly detected. The fisherman steers with a gun by his side; the peasant digs his potatoes with a gun on the turf, and a heap of birds on his coat. On an island where there are no cows, and sheep are kept for their milk only, meat is of course very dear, especially as it has to be brought by steamer from Hamburg, one of the dearest cattle-markets on the continent of Europe. Birds therefore naturally form an important article of diet to the Heligolandiers. Every bird which appears is whistled within range with marvellous skill. The common birds are eaten, the rare ones sold to the bird-stuffer, and the new ones taken to Gätke. Many of the Heligolandiers are clever shots. Long before sunrise the island is bristling with guns; and after dark the netters are busy at their throstle-

bushes ; whilst at midnight the birds commit suicide against the lighthouse. When we consider that this has been going on for a quarter of a century, and that the results have been most carefully chronicled for that length of time, the wonder is not that so many species of birds have occurred on Heligoland, but that so many have hitherto escaped detection. This must be accounted for on the theory that, after all, the appearance of birds on Heligoland is only accidental. Comparatively little migration is observed by the casual visitor who frequents the restaurant to enjoy the oysters and the lobsters, or rows across to Sandy Island to bathe on the shore, and take a constitutional on the "dunes." Now and then a flock of waders may be detected hurrying past ; flocks of pipits occasionally land on the island, feed for an hour or two, and then pass on ; and sometimes a scattered and straggling stream of hooded crows, of heavy and laborious flight, will continue all day long. But by far the most important migration will be found to have taken place "while men slept." Every flock which passes over probably drops a few tired or hungry birds, and a walk through the potato-fields in the morning after a migration night sometimes turns up the most curious and interesting variety of species which have sought the only cover on the island to feed or rest. Perhaps the first bird you flush is a skylark ; the report of your gun starts a golden plover, or a jack snipe ; then you observe some small birds skulking in the potatoes, and you presently secure a little bunting, an aquatic warbler, and a shore-lark. Your next shot may be a corncrake, followed by a ring ousel or a Richard's pipit.

Every night, however, is not a migration night. Sometimes for a week together you may diligently tramp the potatoes without finding a bird. Migration is a

question of wind and weather. Aeuckens, the bird-stuffer on Heligoland, told me that birds migrate north-east in spring, and south-west in autumn. Gätke, on the other hand, maintains that the directions are due east and west. Both agree that birds dislike an absolutely favourable or absolutely contrary wind. The former ruffles their feathers and chills them ; the latter, if too strong, impedes their progress. They prefer a side wind, and probably alter their course slightly to accommodate themselves to it. It is even said that they will sometimes tack. Weather is perhaps as important as wind. Under ordinary circumstances a bird does not require to rest on Heligoland, and the arrivals for the most part are said not to be from any point of the compass, but perpendicularly from the sky. The islanders describe with great gusto the sudden arrival of thrushes in this manner. There are scarcely any trees on the island, so the peasants make artificial bushes with a net on one side into which the poor thrushes are driven with sticks and lanterns as soon as they alight. Some hundreds are thus frequently caught in one night. By long experience the Heligolandians know when to expect an arrival of birds. Aeuckens related to me how they would watch on favourable nights by the throstle-bushes, when on a sudden, without a moment's warning, a rush and whirl of wings would be heard, and the throstle-bush would swarm with thrushes, not dropped, but apparently shot like an arrow from a bow, perpendicularly down from the invisible heights of mid air. It is supposed that migration takes place for the most part at a high elevation, beyond the range of our vision ; that the birds migrate by sight, and not, as has been assumed, by blind instinct ; that they are guided by prominent landmarks with which they have gradually become familiar ; and that many birds which

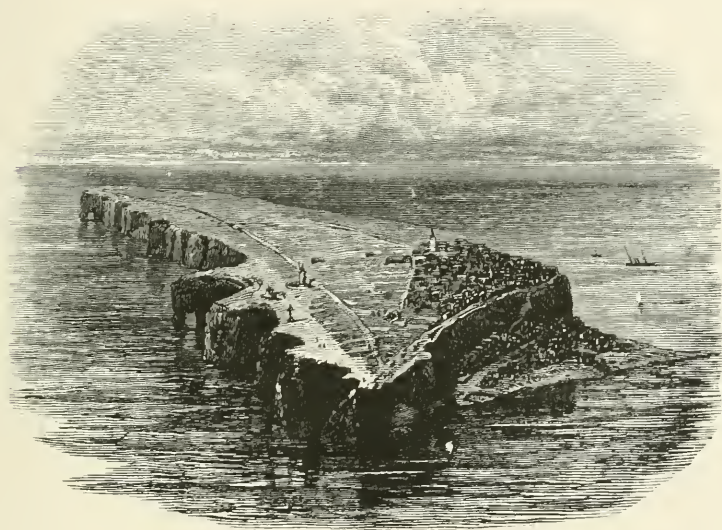
are not gregarious at any other time of the year become so during the periods of migration, in order to avail themselves of the experience of the veteran travellers of their own or of other species. The desire to migrate is a hereditary instinct originally formed and continually kept up by the necessity to do so, in order to maintain a struggle for existence against the changes of temperature, but the direction in which to migrate must be learned afresh by each individual. The theory that migration ordinarily takes place at high elevations is supported by the fact that it is only in dark or cloudy weather that migration on a large scale is observed. It is supposed that the landmarks being obscured by clouds, the birds are obliged to descend to see their way, for it is observed that as soon as the clouds begin to break, the migration apparently comes to an end. On dark nights the stream of migration suddenly stops when the moon rises. Each bird has its time of migration. Weather has, apparently, nothing to do with this date. Good weather does not seem to hasten the birds to their breeding haunts, nor bad weather retard their starting. If the suitable conjunction of circumstances occur during the season of a certain bird's migration, that bird visits the island. If the season goes by without such conjunction, the bird does not visit the island. The period of its migration is over. The migration of this species has taken place at high altitudes, it may be, or by other routes; and it is in vain to look for it until the next season of migration comes round, when, given the necessary wind and weather, the appearance of the bird may confidently be expected.

The period of migration of each species lasts about a month. In spring, during the first week, the flocks consist principally of adult males; during the second week,

they principally consist of adult females; in the third week, follow the birds of the year; whilst finally, during the last week, arrive the cripples—birds which have lost their toes, birds with half a tail, birds with one mandible abnormally long, or birds with some other defect. In autumn the order of migration is somewhat different. For weeks before the regular period of migration is due stragglers in various stages of plumage arrive, loaf about in a desultory manner for a few days, and then disappear. Some of these birds are in summer plumage, some of them in their winter dress, whilst others are in a transition stage, moulting as they migrate. These *avant-coureurs* are supposed to consist of barren birds, odd birds who have been unable to find a mate, or birds whose nests have been destroyed too late in the season to allow of a second nest to be made. Having nothing else to do, the hereditary instinct to migrate not being checked by the parental instinct, they yield to its first impulses, and drift southwards before the general body of their species. When the period of migration sets in in earnest, astounding as the fact is, it is nevertheless true that the birds of the year are the first to migrate, birds which of course have never migrated before. This circumstance, which all the Heligoland-ers with whom I conversed agreed in corroborating, may to a large extent account for the fact that the rare stragglers recorded as visiting Heligoland and other countries are for the most part birds of the year on their first autumn migration. It is not to be wondered at that on their first journey they should frequently stray from the direct course. Probably the mortality amongst birds of the year is very great, especially amongst those who take the wrong road on their first migration. The yellow-browed warbler (*Phylloscopus superciliosus*, Gmel.) breeds in immense numbers

on the Arctic circle in Siberia. The main line of migration of this, as well as of several other species of birds breeding in the same district, is eastwards, passing through North China and conducting them to South China, Burma, and the eastern portion of India, where they winter in abundance. Several birds, some nearly allied, and one congeneric, migrate west instead of east from the same breeding-grounds, and with these a few yellow-browed warblers appear annually to mix and find their way to Europe, passing Heligoland in small numbers nearly every autumn. Probably most of these wanderers perish during the winter, as they have been observed in spring on Heligoland only once every few years. This charming little bird has once been recorded from the British Islands. I saw one or two during my short stay on Heligoland, and was fortunate enough to shoot one. For nearly a week, whilst I was visiting this interesting locality, the weather was unfavourable. There were scarcely half a dozen birds on the island. I used to take a constitutional with my gun twice or thrice a day, spending most of the rest of the time in Mr. Gätke's studio, chatting about his birds, visiting regularly Aeuckens, the bird-stuffer, to inquire if any one else had had better luck. On the 11th of October I shot three shore-larks. Aeuckens told me that the appearance of this Arctic species was a very good sign, that he had often noticed that a few birds always preceded the favourable weather, and that we might soon expect a change and plenty of birds. The next day the west winds, which had prevailed for a week, slackened a little. In the afternoon it was a calm, with a rising barometer; in the evening a breeze was already springing up from the south-east. I called upon Gätke, who advised me to go to bed, and be up before sunrise in the morning, as in all probability

I should find the island swarming with birds. Accordingly I turned in soon after ten. At half-past twelve I was awoke with the news that the migration had already begun. Hastily dressing myself, I at once made for the lighthouse. As I crossed the potato-fields birds were continually getting up at my feet. Arrived at the lighthouse, an intensely interesting sight presented itself.



HELIGOLAND

The whole of the zone of light within range of the mirrors was alive with birds coming and going. Nothing else was visible in the darkness of the night, but the lantern of the lighthouse vignetted in a drifting sea of birds. From the darkness in the east, clouds of birds were continually emerging in an uninterrupted stream ; a few swerved from their course, fluttered for a moment as if dazzled by the light, and then gradually vanished with the rest in the western gloom. Occasionally a bird wheeled round the lighthouse and then passed on, and

occasionally one fluttered against the glass like a moth against a lamp, tried to perch on the wire netting and was caught by the lighthouse man. I should be afraid to hazard a guess as to the hundreds of thousands that must have passed in a couple of hours; but the stray birds which the lighthouse man succeeded in securing amounted to nearly 300. The scene from the balcony of the lighthouse was equally interesting; in every direction birds were flying like a swarm of bees, and every few seconds one flew against the glass. All the birds seemed to be flying up wind, and it was only on the lee side of the light that any birds were caught. They were nearly all skylarks. In the heap captured was one red-start and one reed-bunting. The air was filled with the warbling cry of the larks; now and then a thrush was heard: and once a heron screamed as it passed by. The night was starless and the town was invisible, but the island looked like the outskirts of a gas-lighted city, being sprinkled over with brilliant lanterns. Many of the larks alighted on the ground to rest, and allowed the Heligolandiers to pass their nets over them. About three o'clock A.M. a heavy thunderstorm came on, with deluges of rain; a few breaks in the clouds revealed the stars; and the migration came to an end or continued above the range of our vision.

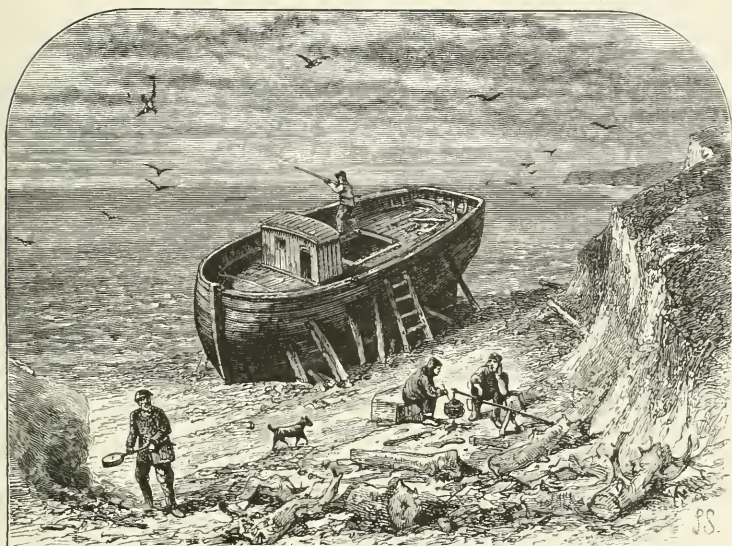
The conclusion I came to after my Heligoland experience was that the desire to migrate was an hereditary impulse, to which the descendants of migratory birds were subject in spring and autumn, which has during the lapse of ages acquired a force almost, if not quite, as irresistible as the instinct to breed in spring. On the other hand, the direction in which to migrate appears to be absolutely unknown to the young birds in their first autumn, and has to be learnt by experience. The idea

that the knowledge of where to migrate is a mysterious gift of Nature, the miraculous quality of which is attempted to be concealed under the semi-scientific term of instinct, appears to be without any foundation in fact. It appears that each individual bird has to find out its own proper winter quarters for itself, and learn the way thither as best it may. That birds have keen organs of sight is a fact well known to all who have watched them obtaining their food or eluding their enemies. That they must have wonderful memories for place is shown by the distance they roam from their nests which, however well concealed, they seem to have no difficulty whatever in finding again. Amongst true migratory birds, that is amongst birds which have a winter as well as a summer home, as distinguished from gipsy migrants who perpetually loaf about on the outskirts of the frost during winter, continually changing their latitude with the temperature, it appears to be a general rule that the farther north a species goes to breed the farther south it goes to winter. It is not known if this applies to individuals as well as to species. The various times of arrival of many species of birds in most latitudes of Europe are well known and carefully recorded, but of the dates of departure from the various latitudes of Africa where they winter we know little or nothing, otherwise this question might easily be settled. It is obviously much easier to record the date of arrival of a bird than of its departure. In the one case a single entry is sufficient; in the other, memoranda may have to be daily recorded for weeks. At Valkenswaard, in Holland, I noticed that the earliest migrants were those with the widest range. Birds whose breeding-range extended to or beyond Britain were the earliest to breed, whilst those whose eggs I was most anxious to obtain, those whose breeding-

range did not extend to our islands, were very late in arriving. It seems to be a curious fact that, as a general rule—though subject, no doubt, to many exceptions—the birds who have come from the longest distance arrive the earliest. The facts of migration are, however, so many, and the theories which they suggest are so various, that we must bring this rambling, if not irrelevant chapter to an end, and return to the narrative of our doings in the valley of the Petchora.



OLD RUSSIAN SILVER CROSS



DOING ROBINSON CRUSOE AT DVOINIK

CHAPTER XXI.

IN CAMP AT DVOINIK.

Trip to Kuya—The Prahms—Travelling in a *Rosposki*—The Birds *en route*—Arrival of the *Triad* at Alexievka—We Win over the Manager—The *Ino*—Doing Robinson Crusoe in a Wrecked Ship—Nest of the Long-tailed Duck—Our First Little Stint's Nest—The Tundra—Sunset and Sunrise—Little Stint's Eggs—The Tundra near Bolvanskaya Bay—Phalaropes—Interior of the Tundra—Change of Plumage in Phalaropes—An Early Morning Start—Confusion of Time—The Snowy Owl—Two more Nests of Little Stint—A March of Geese on the Tundra—An Old Grave.

A DAY or two after our return from the Golievski islands, a chance suddenly turned up of making a trip up stream to Kuya. The rafts, which ought by this time to have reached Alexievka, had not arrived, and ill-natured rumours of their having run aground were brought down by some fishermen. The manager of the company had also run out of various *articles de luxe*, which his soul

lusted after ; so the steamer was ordered to Kuya, and we gladly accepted berths in her. On the way we met one of the rafts coming down from Kuya. We drove on to Mekitza to visit the prahms ; queer-looking vessels, something like canal-boats, carrying a gigantic mast in the centre, and an arched roof above. Each vessel is a shop, where miscellaneous merchandise is sold or bartered, and the owners who come down every summer from Tcherdin, near Perm, are sometimes very wealthy men. The goods fetch high prices on board. We paid elevenpence per pound for sugar, and six shillings for tea. The merchant from whom we bought our provisions was reputed to be worth a million sterling. Nor was it extraordinary, considering the amount of trade he managed to secure. He had come down to Mekitza with three prahms, had cleared the cargo of two, and sold the vessels, and very few goods now remained in the one in which he intended to make his journey homeward. In the villages the prices were much lower than those asked on the prahms. Thus we paid only 1 $\frac{3}{4}$ d. per lb. for excellent fresh beef.

At Kuya several timber-rafts passed us, proceeding to Alexievka ; these we waylaid. They were carrying a batch of letters for us, up to June 7th. Having secured this welcome prize, we set our faces towards our headquarters.

The five versts between Kuya to Mekitza and back we travelled in a *rosposki*, a machine composed of four wheels, about two feet in diameter, the axle-trees of which are connected by three parallel poles, upon which we sat. This vehicle is, without exception, the most uncomfortable carriage it has ever been my ill-luck to travel in. There is no support for the back, nothing to hold on by at the sides ; only three bare poles to sit on, and not height enough from the ground to swing one's

legs about in peace. On the way we saw sand-martins, hooded crows, arctic terns, common gulls, ringed plover, and Temminck's stints. We got young in down of the ringed plover and arctic tern, and shot a long-tailed duck with her brood of ducklings. At Kuya we saw both the common and the tree sparrow.

The morning had been intensely hot; in the afternoon the wind rose, veered round to the north, and the night was stormy and cold. The next day the chill continued, and for the time being the plague of mosquitoes was stayed. It was a pleasant surprise, on reaching Alexievka, to find an English schooner, the *Triad*, Captain Taylor, anchored in the river. She had come over from Iceland, whither she had carried coal, and was now chartered for larch to Cronstadt. We at once secured berths in her. She intended to sail in ten days, hoping to make Elsinore in a month.

The cold weather continued the next day. We spent two hours at Wassilkova, but saw little of interest. The red-throated pipits were in full moult, but we brought home some of their young, also those of the yellow-headed wagtail and dunlins, and a pintail duck and its half-grown ducklings. The next day my companion secured another specimen of our new pipit, for which we had been looking in the neighbourhood. The day was memorable for having brought successfully to a conclusion our negotiations with Captain Arendt, the manager of the company. A watch, a revolver, a musical box, and a ten-pound note had brought him round, and on the morrow the steamer was to be placed at our disposal. We were in high spirits, shouting, "Hurrah! for Dvoynik and the Little Stint!" The next morning we were fairly off by 10 A.M. It was damp and chilly, with a light breeze from the north-west. As we neared the bar, we

sighted a brig under full sail. We hoisted a *rendezvous* flag, and went on board. Though flying Danish colours, we found she was an English vessel—the *Ino*, from Newhaven. The captain told us he had been some days trying to get into the Petchora, but he was unable to reach it by steering between islands Nos. 3 and 4, owing to the ice, and had come round the east passage between islands 7 and 8 and Varandai. This ice accounted for the extraordinarily cold weather we had been having since the previous Sunday.

About four we landed at Dvoinik, and took possession of a stranded vessel that was lying high and dry upon the beach. It was settled that the company's steamer should call for us on the following Tuesday, Wednesday, or Thursday, according to the final arrangements for the starting of our schooner, the *Triad*, in which we were to make part of our homeward passage. Meanwhile we were to live at Dvoinik, in regular Robinson Crusoe fashion. The deserted vessel looked very comfortable, and we anticipated a jolly time.

Leaving the men to sweep up the hold, we started off in high glee for a raid upon the Little stints. We hastened over the tundra, making for the marshy ground upon which I had seen the dunlins, but not one was there. Possibly, we thought, the young could fly by this time, and had joined their parents on their favourite feeding-ground. On the brackish lake close by we shot a brood of long-tailed ducks, and afterwards found an empty nest in the short, coarse grass, placed exactly at high-tide water-mark. It contained down enough to identify the species. There was no cover to the nest, except a margin of thin turf, that looked as if it had been turned up by a spade. On the lake there were, as before, a couple of black-throated divers. I waited for a short

while, hiding in the cleft of the bank, as I had done on the previous occasion when I had shot the Little stints, but none were to be seen. I then skirted the margin of the bay to its narrow entrance, having spied a grey plover or two, a pair of Arctic terns, and a few herring-gulls. When there, a small number of dunlins passed rapidly overhead, and I repeatedly saw flocks of Little stints. However, these might have been the same flock passing and repassing. They were very wild, and I could not get a shot. Some time before, my companion and I had parted company. We now met at one of the capes at the southern extremity of the high promontory. Cocksure was with him. On comparing notes I found their experience had been much the same as mine, only Cocksure shot a Temminck's stint, near the sandhills. In returning we separated again to cover more ground; and again when we met, and compared notes, we found that to each the sandhills, the lakes, and the shores had proved a blank, destitute of bird-life.

We then separated for a stroll on the tundra. I had not gone far before I heard our interpreter Piottuch shouting in a state of great excitement. Harvie-Brown was the first to come up; and I joined them shortly afterwards. I found them sitting on the ground, with a couple of Little stints in down. I sat down beside them, and we watched the parent bird as she was fluttering and flying and running all round us, sometimes coming within a foot of one of us. After securing the old bird we went on a short distance, and Piottuch again made loud demonstrations of delight. This time it was nest and eggs. The nest was like that of most sandpipers, a mere depression in the ground, with such dead *maroshka* (cloudberry) leaves and other dry materials as were within easy reach, scraped together to serve as

lining. The position was on a comparatively dry extent of tundra, sloping from the top of the little turf cliffs that rise from the lagoon down to the sandhills at the twin capes, between which the tide runs in and out of a little inland sea. These sandhills are flanked on the side next the sea with piles of drift-wood of all sizes and shapes—lofty trees which have been mown down by the ice when the great river broke up and in many places overflowed its banks, squared barks of timber washed away by the floods from the stores of the Petchora Timber-trading Company, and spars of luckless ships that have been wrecked on these inhospitable shores. They are sparingly sprinkled over with esparto grass, and soon run into an irregular strip of sand and gravel. This part of the coast, however, did not seem to have any attraction for the Little stints. There were plenty of ringed plover upon it, and a few Temminck's stints; and we saw a pair of snow-buntings with five young, which had probably been bred amongst the drift-wood. At Dvoinik, however, for perhaps a verst from each twin cape, between the sand and the mouth of the little inland sea, is an extent of dead flat land, covered over with thick short grass, and full of little lakes, mostly very shallow and filled with black or coffee-coloured mud with an inch or two of brackish water upon it. Some of these pools are covered with aquatic plants, and others are open water. These lakes and pools seem to be the real point of attraction; and on their edges the Little stints feed, in small flocks of from half a dozen birds to a score, as they happen to meet from the tundra. The large flock of perhaps a hundred or more birds, which was occasionally seen, might possibly have been last year's birds and not breeding; but more probably it consisted entirely of males, which, so far as we had an opportunity of observ-

ing, do not take any part in incubation. The ground where the nests were placed was full of tussocks or hummocks, close together, the swampy ground between being almost hidden, or traceable only by rows of cotton-grass. The nests were within a hundred yards of the place where I shot the five Little stints on July 14, on a comparatively dry extent of tundra gently sloping towards the north-east, lying between the lagoon and the inland sea—exactly the place in which one would expect them to breed, not too swampy, but probably the coolest place the birds could have chosen. The Pytkoff Mts., though at a considerably greater elevation (513 feet above the level of the sea), are no doubt warmer, because more inland. The sandy shore, having little or no cover, would also be hotter from the sun. Facing the north-east, this part of the tundra catches the most of the prevailing winds at this season of the year, and the least sun; and no doubt the large bay or inland sea on one side, and the open water on the other, help to cool the air.

We had already given names to the different sorts of ground on the tundra. The dry, grassy hills were the shore-lark ground; the dead, flat bog, intersected with tussocky ridges, was the grey plover ground; the swampy marsh, covered with long grass, was the reeve ground. Where the grass was shorter and more tangled and knotted, it became dunlin ground; and where this short grassy swamp was sprinkled over with tussocks of dryer earth, covered over with moss and flowers, it was the Lapland bunting or red-throated pipit ground. The part where the tussocks lay so close together that they reminded one of the hundred domes of the Stamboul bazaar seen from the minaret of Santa Sophia, and the swampy ground was almost hidden, or traceable only by

rows of cotton-grass, we agreed to call for the future the Little stint ground. The hummocks were covered with green moss, mingled here and there with a little hoary reindeer moss. This undergrowth was concealed by the *maroshka* (the cloudberry), a species of rush, sedges, the dwarf sweet-smelling daphne, and other shrubs and flowers of the tundra.

The last few days had been almost winter, but on the following day it was summer once again. The wind had dropped and the clouds had gone from the sky. This was the bright side of the change; the reverse was the swarm of mosquitoes that hung over the tundra. Brown and I visited the Little stint ground again, on the principle of "stick to your covey"; but not a bird or a nest could we see upon it. We shot a wheatear on the shore, saw a pair of sanderlings, dropped a fine glaucous gull, a reeve, and some other birds, and then returned to our quarters. Our Samoyede brought us a couple of nests of long-tailed ducks, one containing three eggs, the other five. We were tired out, so having cooked a duck for dinner, we went to bed at 4 A.M., to rise at 11 A.M. We began our day (let the reader forgive the Irishism, it is only a Petchorski bull), by watching the sun set and rise again in the space of an hour or so; then we set off, hoping to get the start of the mosquitoes. It was a dead calm, and taking the boat, we crossed over to the north twin cape. We found the sand barren of special interest, as it had been on the other side; only the intrusive ringed plover made as much hubbub as a hundred Little stints or grey plovers would have done, evidently considering its eggs were the only ones we could possibly be in search of. The lakes and pools were very similar in shape and appearance to those on the south cape. Temminck's stints were

somewhat more abundant, and we fell in with one small party of Little stints. Before leaving this ground we devoted an hour to duck-shooting for the pot, and bagged three long-tailed ducks, and one pintail with two young in down. We then turned our attention to the tundra, which rapidly rose some forty feet or so, afterwards sloping gradually down apparently to the Pytkoff hills, distant some fifteen miles. In many places a white mist lay over the landscape, resembling far-away lakes. There were numerous small pools of water, but we could not distinguish them until within a short distance. In suitable ground the grey plover abounded, and we shot young Lapland buntings; yet on the whole the tundra did not look inviting—grey plovers and their eggs were not sufficient attraction to lure us to face the mosquitoes; so turning away from it we began to explore the shores of a river winding inland. On its high steep grassy banks we found shore-larks, old and young, and what was even more to the purpose and acceptable in our present Robinson Crusoe situation—an abundance of leeks or eschalots, of which we laid in a plentiful supply. We recognised an eagle soaring overhead, we saw some skuas, ringed plovers, Temminck's stints, and redpolls, but nothing of special interest. It was now about eight o'clock, so we rowed back to the entrance of the inland sea, intending to cross over to our quarters on the south cape, when suddenly a dense white mist, coming from the Arctic ice, fell upon us. We hastened to run our boat ashore, stopping to shoot a sanderling on a sandbank, and soon after an Arctic tern.

Our next nest of the Little stint was taken on the 24th of July. Harvie-Brown and I had been up all night, shooting by the light of the midnight sun, hoping

to avoid the mosquitoes, and were returning home to our wrecked ship in a thick white morning mist. I stopped behind to refresh myself with a bath, and afterwards turned towards the Little stint ground. Just as I reached it I was glad to see Piottuch emerge from the white mist, with the intelligence that he had found another nest of this bird, containing four eggs, about three versts off, and had shot the bird, leaving the nest and eggs for us to take. We walked on together a short distance, when I heard the now familiar cry of a Little stint behind me, a sharp *wick*, almost exactly the same as the cry of the red-necked phalarope, or that of the sanderling. Turning quickly round, I saw the bird flying past as if coming up from its feeding-grounds. It wheeled round us at some distance and alighted on the ground about eighty yards ahead. We walked slowly up towards it, and stood for some time watching it busily employed in preening its feathers. By-and-by we sat down. It presently began to run towards us, stopping now and then to preen a feather or two; then it turned back a few paces, and lifting its wings settled down, evidently on its nest. We gave it three minutes grace, to be quite sure, and then quietly walked up to the place, and sat down, one on each side of the eggs. The bird as quietly slipped off the nest, and began to walk about all round us, now and then pecking on the ground as if feeding, seldom going more than six feet from us, and often approaching within eighteen inches. It was a most interesting and beautiful sight. The tameness of the bird was almost ludicrous. We chatted and talked; but the bird remained perfectly silent, and did not betray the slightest symptom of fear or concern, *until I touched the eggs*. She then gave a flutter towards me, apparently to attract my attention. I turned towards her, and she resumed her former un-

concern. I stretched my hand towards her. She quietly retreated, keeping about two feet from my hand. She seemed so extremely tame that I almost thought for the moment that I could catch her, and, getting on to all fours, I crept quietly towards her. As soon as I began to move from the nest, her manner entirely changed. She kept about the same distance ahead of me; but instead of retreating, with the utmost apparent nonchalance, she did everything in her power to attract me still farther. She shuffled along the ground as if lame. She dropped her wings as if unable to fly, and occasionally rested on her breast, quivering her drooping wings and spread tail, as if dying. I threw one of my gauntlets at her, thinking to secure her without damage, but she was too quick for me. Piottuch then fired at her, and missed. He followed her for some distance; but she kept just out of range, and finally flew away. We waited about a quarter of an hour at the nest, talking and making no effort to conceal ourselves, when she flew straight up and alighted within easy shot, and I secured her.

The Little stint seems to be a very quiet bird at the nest, quite different from Temminck's stint. When you invade a colony of the latter birds, especially if they have young, the parents almost chase you from the spot—flying wildly round and round and crying vociferously, often perching upon a stake or a tree, or hovering in the air and trilling. We observed none of these habits in the Little stint. So far as we saw, only the female takes part in incubation, and only the female is seen near the nest. On our way back to the wreck we met with a party of sanderlings on the shore, and shot two of them. No doubt these birds were breeding somewhere in the district. After a good dinner of willow-grouse and a siesta of three hours, we started to take the nest that Piottuch had marked. Whilst we had slept the weather

had changed. The mosquitoes had all gone. A smart gale was blowing from the north, and a heavy sea was breaking on the shore. It was cloudy, dark, and cold, with an attempt now and then at rain. The nest was a couple of miles off, very near the shore of the inland sea, but on somewhat similar ground—moss, cloudberry, grass, and the like. The eggs were intermediate in colour between those of the other two nests. On our return to our quarters we found that our Samoyede servant had caught a young Little stint, half-grown, a very interesting bird. Like the young of the dunlin, the first feathers are those of summer plumage. On comparing the young in down and half-grown birds of the dunlin with those of this bird, we noted that the legs of young dunlin in down were pale brown, whilst those of the half-grown and mature birds were nearly black; the Little stint, on the other hand, seems to have nearly black legs and feet at all ages.

The Little stint is evidently much more nearly allied to the dunlin than to Temminck's stint, and ought to be called the Little dunlin. The birds are very similar in colour. Their eggs can hardly be mistaken for those of Temminck's stint, but are in every respect miniature dunlins' eggs. The young in down of Temminck's stint are quite grey compared with the reddish-brown of the young of the dunlin. The young in down of the Little stint are still redder, especially on the sides and the back of the neck.

The average size of the twenty eggs we obtained of the Little stint is about $1\frac{1}{16} \times \frac{3}{4}$ inch, a trifle smaller than the eggs of Temminck's stint usually are. The ground-colour varies from pale greenish-grey to pale brown. The spots and blotches are rich brown, generally large, and sometimes confluent at the large end. They probably

go through every variety to which dunlins' eggs are subject. All the eggs which we found, with one exception, which would probably be a barren one, were very much incubated.

The following morning the gale from the north continued. It was a mosquitoless day, and very cold; a heavy sea still broke against the shore; ever and anon the sun shone, but masses of cloud kept drifting over the sky. We spent the day in exploring the tundra in the direction of Bolvanskaya Bay. Far as the eye could reach the country stretched before us, a gently undulating moor, an Arctic prairie, a Siberian tundra; no hills were on the horizon, save the short range of the Pytkoff Kamin. Plenty of lakes, large and small, gleamed upon the expanse; the banks of most of them were steep and of peat; others were flat, and covered with rushy grass; rarely were they sandy. Here and there the pools were almost dried up; some were so choked up by coarse grasses, rushes, and *carices* as to become swamps, holding a little space of open water in the centre. These were quite accessible, however, thanks to our waterproof boots; we sank some twelve to eighteen inches through water and mud, but reached a safe bottom, hard and level as a stone floor, a solid pavement of ice. We spent an hour or two wading round one of these open spaces of water, forming the centre of a choked-up lakelet. Upon a little island of firm ground, that raised its summit above the reeds, was the empty nest of some bird, probably a gull, and close to the open water was the nest of a black-throated diver, with one egg. The latter was placed upon a foundation of roots and dead grass, half turned to peat, raked up from the bottom of the swamp, and upon this was placed a lining of fresh green flaggy grass. The egg was very small; but both parent birds were

flying overhead, often coming near enough for identification. On the open water phalaropes were swimming, and we frequently rose them from the grasses at our feet. Their behaviour plainly showed that they were breeding; they circled round us wildly, uttering their usual cry. We secured three young in down, only recently hatched.

We spent another hour on the banks of a large lake, upon which swam two pairs of long-tailed ducks, each with its brood. After waiting and watching and stalking, we got hold of two old birds, two of the young in down of one brood, and six more grown-up young of the other. On the sandy margin of another lake, white with the seeds of the cotton-grass, we saw several ringed plover, and shot one Little stint. We came upon a few Buffon's skuas, and on their ground we found the grey plover abundant as usual. Returning home, I chose the lee shore for my route, and as I came along watched several glaucous and herring gulls, saw a pair of wheatears, and shot a shore-lark.

Meanwhile our Samoyede and our half-breed had made a long excursion into the tundra by the banks of the rivers Erisvanka and Eevka. They described the country as exactly the same as that which we already knew—moor, swamp, and bog, with plenty of lakes, large and small. They had met nothing of interest, except ducks, geese, and swans. These birds were now evidently leaving their breeding haunts and retiring into the tundra to moult. During this period of comparative helplessness and inability to fly, they are attacked by the Samoyedes on their way back from Varandai and the Bolshai Tundra. The Samoyedes have grand battues amongst the geese, and return to the Petchora laden with feathers and down, which they sell at the Pinega fair. Our men brought back with them but one bird. This

was perhaps the most interesting of all to us—a Bewick's swan, shot on the banks of a great lake in company with four others.

On the morrow the storm continued, and rain fell during the morning ; so we spent the hours inside our wreck, writing up our journals and examining the phalaropes.

The idle morning seemed a long one. After dinner we smoked a pipe, whiled away the time in chatting, and then retired, as I thought, very early to bed. I woke after some hours and got up, for I had had sleep enough, shouldered my gun, and went out, leaving all the others still deep in their slumbers. It was very windy, and ever and anon came gusts of rain, yet there were more birds than usual out feeding. "It's the early bird that catches the worm," I said to myself.

My first care was to seek out the Little stint ground. I saw several birds upon it, but no trace of a nest could I discover. Then I took a long stroll along the edge of the inland sea and by the banks of the river beyond. As I went along I constantly heard the clear, sharp, but not loud cry of the Little stint and phalarope—*wick*—but I had not yet learned to distinguish the one from the other, nor could I tell either from the cry of the sanderling. The spluttering note, *pt-r-r-r*, of the Temminck's stint is very distinct ; so is the dunlin's thick hoarse cry of *peezh*, or its grating call-note—*trr*—as well as the noisy *too-it* of the ringed plover.

I had been out some hours when I met my companion, and hailed him with "Good morning." He answered with "Good evening." We both agreed the hour was seven, but we differed as to its being A.M. or P.M. I was convinced it was the morning of the morrow, whereas Harvie-Brown was persuaded it was yester-

evening. A never-setting sun plays strange pranks with one's reckoning of time.

Harvie-Brown had worked the Little stint ground, but had not seen a bird upon it. While with me, he shot a brace of grey plovers ; then we parted, and I returned to the Little stint feeding haunts. I secured a brace of them, a few dunlins, old and young, and a grey plover ; also some young Temminck's stints half-way between feathers and down. As I was picking up the latter I discerned in the distance the form of a great white bird, which seemed to me to alight upon a distant lake. Taking it to be a Bewick's swan, I put a slug-cartridge into my gun and walked rapidly on in its direction. Before I got within shot of it the bird rose, and I saw a snowy owl drop behind the sand-hills. I carefully stalked it, looked around, and after a time descried a white spot resting on the north twin cape, which, with the aid of my telescope, I discovered to be the owl. He, too, must have been watching me ; perhaps he took my sealskin cap for some new species of lemming, for presently he rose and flew across the water directly towards me. By the time he had reached the other twin cape he evidently discovered his mistake, and alighted on the beach about sixty yards in front of me. I rose and walked towards him ; he also rose, but before he had flown ten yards my shot reached him, broke one of his wings, and dropped him into the sea. As he lay struggling in the water a score of glaucous and herring-gulls came flying towards him, and sailed round and round him, making quite a small uproar with their cries. I was too anxious, however, to secure my first snowy owl to pay any heed to them, especially as my cartridge extractor had got out of order ; I therefore plunged into the water, and, as it was shallow, I soon landed my prize.

My extractor was a complicated new-fangled patent invention, and already that day it had caused me to lose a pair of Buffon's skuas. I had shot a young dunlin on the muddy margin of the inland sea, breaking with the same barrel the wing of an old dunlin ; with the second barrel I killed a Little stint. The wounded bird lay a few yards off, when suddenly, down there flew upon it a couple of Buffon's skuas, who quarrelled over it and carried it off before—unable to reload—I could wade through the mud to the rescue.

After securing the owl, I carried my trophy home in triumph, overtaking my companion by the way. On reaching the wreck, we finally settled the question of evening or morning. We satisfactorily established that it was the former, so we dined and went to bed again.

The next day the gale continued, but there was some sunshine, and the cold kept the mosquitoes at bay. I spent my morning superintending the cooking of the swan our men had brought the preceding day. Meanwhile Harvie-Brown went out to the far end of the inland sea, and got a little distance from the spot where we had found the last nest of the Little stint. He came upon two more. We had by this time twenty of these birds' eggs ; all miniature dunlins' eggs, and like them, varying in colour. These two nests were not built on the tundra proper, but on the feeding-ground—a flat sandy strip of land on which grew short grass and bunches of a thick-leaved yellow-flowering plant, sprinkled here and there with dried-up or drying pools, and with drift-wood lying scattered about in all directions. The tundra stops at some 150 yards from the seashore, and this stretch of feeding ground lies between it and the water's edge.

After lunching on the baked breast of the swan, I

returned to the wreck, but by a different route from that which my companion had taken. I took the boat across to the north twin cape, and was an hour pulling half a verst against the heavy gale. I then skirted the margin of a long narrow inlet, exactly like the dried-up bed of a river, running some miles into the tundra, bending round almost behind the inland sea. I had not gone more than a mile when I heard the cackle of geese; a bend of the river bed gave me an opportunity of stalking them, and when I came within sight I beheld an extraordinary and interesting scene. At least one hundred old geese, and quite as many young ones, perhaps even twice or thrice that number, were marching like a regiment of soldiers. The vanguard, consisting of old birds, was halfway across the stream; the rear, composed principally of goslings, was running down the steep bank towards the water's edge as fast as their young legs could carry them. Both banks of the river, where the geese had doubtless been feeding, were strewn with feathers, and in five minutes I picked up a handful of quills. The flock was evidently migrating to the interior of the tundra, moulting as it went along.

On the top of the high embankment bordering the river I came upon a wooden monument, about a foot in height and width, and from two to three feet in length. The wood was entirely rotten, and I easily broke and tore open the lid that still covered it. Inside I found bones like those of a dog, a broken vessel of glazed earthenware, the rusty remains of an iron vase, and an abundance of mould. Outside were fragments of bleached bone, like the remains of an infant's skull. This was doubtless a Samoyede's tomb; but we could not determine if it was that of an infant, whose remains

had been buried in the box, or that of an adult interred below.

After loitering some time about this spot I pushed on farther, crossing over a plateau of tundra, well covered in places with willows some three feet high. Here I found willow-grouse with young well able to fly, many willow-warblers, a few redpolls, and one blue-throated warbler.



OLD RUSSIAN SILVER CROSS



MIGRATION OF GEESE

CHAPTER XXII.

HOMeward BOUND.

On Short Commons—Bad Weather—A Foraging Party—Russian Superstitions—Return of the Steamer—Beautiful Flowers—Arrival at Alexievka—Departure for Home—Thunderstorm—Water-spout—Sea-birds—Hard Fare—Copenhagen—Summary of the Trip.

MATTERS were beginning to look somewhat serious in our Robinson Crusoe encampment. The heavy gale continued to blow unabated, and it was very probable the steamer would not call for us until the sea grew quieter. Meanwhile our larder was nearly empty. We were reduced to half a loaf of bread, and to what birds we could secure. We breakfasted on a grey plover, a brace of dunlins, and three duck's eggs, which, though somewhat incubated, yet made a good omelette. There was nothing, however, for dinner, so we all turned out

to provide for the pot. Harvie-Brown went south, and returned with only a few dunlins and a grey plover; he had chased a bar-tailed godwit for some distance near the seashore, but had not got within shot. I had met with no better luck, for although I had brought down a dozen dunlins and grey phalaropes as they fed on the margin of a lake I had been able only to secure three. At the first step I took in the direction of my prizes, I sank lower than knee-deep into the black mud. My gun also snapped at a willow-grouse within easy range. We returned to our quarters somewhat down-hearted; the gale was blowing more fiercely than ever, a thick mist covered the sea, and gusts of wind drove the rain into the wreck. We cooked ourselves a supper of fried dunlins, and allowed to each a weak basin of Liebig's extract-of-meat soup, and half a slice of bread. About midnight, as we smoked our pipes and listened to the howling and spitting of the wind and rain outside, our thoughts followed the forlorn-hope party we had sent out, and we doubted whether it would meet with better luck than we had. This party consisted of Cocksure, the Samoyede, and the half-breed. They had gone on what might be called, in a double sense, a wild-geese chase, in pursuit of the flock of geese I had seen the day before migrating across the water into the tundra. We went to bed hoping against hope, and were awakened towards four by the noisy arrival of our envoys, carrying back in triumph eleven old geese and five young ones. One of the party had taken the boat up the river upon which I had seen the flock. The other two followed, each keeping upon opposite banks. They came upon the geese a few versts higher up than the spot at which I had seen them, and falling upon them had made a grand haul of birds. The laying in of this stock of provisions lifted a

burden off our minds. We now proceeded to administer, with better grace than we could have before, a sound rating to our two lazy, good-for-nothing Russian servants. They were the only two who had grumbled during this time of perplexity; for ever muttering that if the storm did not abate and the steamer come to our rescue, we should surely all be "*propal*" (lost). We had ordered one to join the forlorn-hope party, but he had soon returned, and all the night he had done little but kneel in a state of abject fear, trembling, crossing himself, and crying, "*Gospodin, Gospodin, dai khleba*" (Lord, Lord, give us bread). These poor dupes of the miserable Greek Church have not learnt the wholesome doctrine Cromwell taught his soldiers, to "trust in the Lord and keep their powder dry." Like many other fanatics at home and abroad, they close their eyes to the truth that God *may* bless their work, but will *never* bless their idleness. As a just punishment for their sloth and cowardice, we condemned them to pluck the geese, on which we and the captors made a hearty meal. While we regaled ourselves they had to look on, and feast upon leeks.

The larger number of geese, being in full moult, had been unable to fly. Cocksure assured us that both old and young constantly hid themselves under the water, where some remained, just keeping their beaks above the surface, for ten minutes at a time. He added that he had often observed the same thing in Mezén during the moulting season.

The gale exhausted its violence during the night, and gradually slackened and wore itself out during the day: when the following morning came, the weather was quite calm. With ten geese in our larder, we considered ourselves entitled to a lazy day, so we wandered out in the tundra, making a small collection of the flowers that grow

upon it, the bonnie bright Arctic blossoms that deck for a few weeks that region of ice. We shot an immature gull, and loafed about, feeling that we had exhausted the place, and hoping for the arrival of the steamer. A flock of what we took to be sandpipers, flying wildly overhead and uttering a note like that of the knot, roused our curiosity. When we at last succeeded in shooting one, the bird turned out to be a reeve. Another incident in this, our last day, was tracing the footprints of a swan in the mud, and identifying them as those of a Bewick's swan.

At two o'clock the following morning I was on our wreck's deck, chatting with Cocksure, when on the horizon we caught sight of the steamer. All our companions were asleep, except the half-breed, but five minutes later all were up and hard at work packing. By five o'clock we were on board, steaming over a sea smooth as glass towards Bolvanski Nos. At eight we went on shore at Stanavialachta to visit the peregrine's nest, where we expected to find a new lot of eggs. From a distance we could see the male bird sitting on the spot. He allowed us to approach to within ten or twelve yards, when suddenly he took the alarm and rose. We fired and dropped him on the beach below. There were no eggs in the nest. Probably the female bird was sitting on the other eyrie; but we were dead-beat with fatigue, and the hillsides swarmed with mosquitoes, so we made our way back at once to the steamer, shooting a willow-grouse as we went, a male in fine summer plumage. The flowers on this part of the tundra were very beautiful, vividly coloured, and abundant; especially lovely was a tall monkshood and a species of pink. On board the steamer we stretched ourselves on the sofa in the cabin and fell asleep, only to awake when the vessel stopped at Alexievka about noon.

The *Triad* was making ready to start on the morrow ; her cargo was to be about 8000 cubic feet of larch. Our stay in these Arctic latitudes was now fast drawing to an end. I spent the afternoon looking about the island, directing my search especially for young of the yellow-headed wagtail. Scarcely a bird was to be seen out of cover. Grass nearly two feet high covered the ground, and the willows were in full leaf. It was difficult enough to get a shot at a bird, and almost impossible to find it when brought down. At last I tried the coast, and found plenty of birds feeding amongst the drift-wood and the prostrate willows that had fallen with the crumbling away of the banks. Yellow-headed wagtails, red-throated pipits, and reed buntings were here in abundance. I could not stay, however, for the sun was scorching hot, and the mosquitoes were swarming.

I spent the night with Captain Taylor and Captain Arendt on board the *Triad*, giving a helping hand in superintending the loading of the schooner. The heat was so intense that I could scarcely bear the suffocation of my mosquito-veil, and seldom put it on. The consequence was that I was more bitten in those few hours than I had been during the whole of my previous stay. I did not turn in till 6 A.M., but I woke at eleven, and spent my day making out the bills of lading for Captain Arendt. At five o'clock on Sunday, August 1, we finally bade farewell to the tundra and to our wandering life, and began our journey towards Europe and civilisation. We left Alexievka in tow of the steamer, reaching the bar soon after midnight. The cutter signalled ten feet of water ; as we were drawing so much we were soon aground, as was to be expected. I sat up with the captain all night as we tediously manœuvred through the shallow water. We had just lit the fire to cook some

supper, when Engel suddenly heaving on the anchor, we got under way again. The captain took the helm, and I remained below cooking the steaks and making the coffee; but we were soon aground once more, and sat down to eat our meal in the cabin. For some hours we went on, sometimes aground, sometimes scraping the bank, until at last we crossed the bar; then Engel towed us until we sighted the beacon at Dvoynik. All sails were now set, and we steered N.E. by N. with a gentle breeze. All the following day and night we tacked from one bank of shoal water to another, with a head wind against us. The lead was kept constantly going, and as soon as the water under the keel was less than a foot, orders were immediately given to "'bout ship." By good luck or good management, we succeeded in getting out of the lagoon of the Petchora without running aground again, though Captain Taylor vowed that nothing should ever induce him a second time to risk a ship in such a dangerous and difficult river. We had scarcely cleared the banks more than half an hour before the wind dropped entirely; the sails flapped idly on the masts, and we sent the crew to bed. We were lounging on the after part of the ship, telling our adventures to the captain, when three curious clouds, like beehives, appeared to rise on the horizon. We were leaning over the bulwarks watching these unusual shapes in the sky, when our attention was caught by the sound of a distant rumbling. The sea was as smooth as glass, and we were debating whether the noise was not that of the Arctic ice, when the captain descried a distant ripple on the sea, and started up as if he had been shot. Hastily asking me to take the rudder, he ran to the hatchway and cried out, at the top of his voice, "All hands on deck!" Every possible exertion was made to haul down the canvas; but

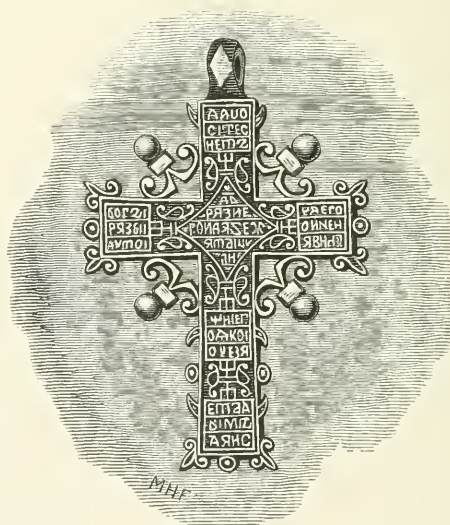
before this could be accomplished the gale came upon us, and the ship reeled as the squall struck her, first on the starboard and then on the port side. By the time the canvas had been taken in, the squall had become violent ; the sea rose, peals of thunder followed each other rapidly, and rain came down in torrents. A still more extraordinary sight presented itself shortly afterwards—a waterspout. About half a mile from the ship the clouds came down in a funnel, and deluges of rain appeared to fall under it, the sea being lashed into foam as if ten thousand millstones had been suddenly hurled into it. It was some hours before the wind settled down again ; but it proved to be a favourable one, and we made fair progress homewards through a Scotch mist from the Arctic ice.

For two days we had fog and fair wind, then came wind and sunshine. On the 3rd of August a few flocks of phalaropes passed overhead, and on the 4th a pair of snowy owls alighted on the ship. We saw also several kittiwake gulls and pomatorhine skuas. Then from the 8th of August to the 29th came three dreary weeks, during which the ship wearily toiled on, against heavy gales and contrary winds, but ever and anon came a fair breeze, to prevent us despairing altogether of ever reaching Elsinore. It seemed hopeless often enough. Various were the tacks the captain tried on the way. One day we would lie-to and let the good ship drift back with the heavy gale towards Kolguev Island, another we would tear along, blown forward by an equally fierce wind, which we welcomed, for it was bearing us homeward. Now we would lie motionless with sails idly flapping against the masts, and again we would be cutting the water with a favourable breeze impelling us on. As we approached the North Cape the weather grew wilder ; it

seemed as if we could never round it ; the bold promontory appeared to frighten away all fair winds. When we were within eighty miles of Bear Island our search for it was vain ; it lay shrouded in impenetrable fogs. At last we left the ill-starred land behind us. We passed the wild peaks of the Lofodens ; we left the storm-tossed waves beating at their feet, and hailed the mountains behind Christiansund in genial weather. During those weeks we saw kittiwakes and Fulmar petrels almost daily ; now and then there passed a skua or a puffin or two, but no bird on migration.

After another week of fair winds, head winds, calms, and gales, we reached Elsinore on the thirty-fifth day. All this time we had roughish fare on board. The *Triad* had no provision for passengers. The first week exhausted our stock of grog and fresh provisions, and the remainder of the journey we had to put up with hard captains' biscuits, Australian tinned meat, and coffee with no milk and short rations of sugar. When we landed at Elsinore we found that we had averaged $2\frac{1}{2}$ knots per hour ! Our first care was to order a good dinner, which we all agreed was the most superb entertainment to which we had ever sat down. For the last fortnight we had dreamed of dining, but always woke before the happy moment arrived. Our dinner at Elsinore was enjoyed with an appetite which we never hope to experience again. Taking the night train to Copenhagen, we arrived there on the morning of Monday the 6th of September. We were disappointed in our efforts to find a steamer for England, so proceeded at once to Hamburg, where my companion found a boat for Leith ; and I lost no time in putting myself and, not my "sieben Sachen," but my "siebzehn Sachen," on board a steamer for Hull.

I left Hamburg in the *Zebra* on Wednesday the 8th of September, and after a smooth passage landed in Hull on Saturday the 11th instant, having been away from home rather more than twenty-seven weeks. Of this time the journey out occupied about six weeks; another six weeks was spent in weary waiting for the arrival of spring; and the journey home took up a third period of six weeks, leaving only nine weeks in which the bulk of our ornithological work was done. Fortunately during this time we had twenty-four hours daylight, of which we frequently availed ourselves. By dint of hard work and long hours we succeeded in doing more in those nine weeks than we could possibly have expected. There can be no doubt that we were exceptionally fortunate in chancing upon the localities frequented by birds which appear to be extremely local during the breeding season.



OLD RUSSIAN SILVER CROSS



FROM MEKITZA TO KUYA ON A ROSPOSKI

CHAPTER XXIII.

RESULTS OF THE JOURNEY.

Results of the Trip—Summer in the Arctic Regions—Circumpolar Birds—Birds Confined to the Eastern Hemisphere—Various Ranges of Birds—Migration of Birds—Dates of Arrival—Probable Route—Conclusion.

THE results of our somewhat adventurous journey exceeded our most sanguine hopes.

Of the half-dozen British birds, the discovery of whose breeding-grounds had baffled the efforts of our ornithologists for so long, we succeeded in bringing home identified eggs of three—the grey plover,* the Little stint, and Bewick's swan. Of the remaining three, two—the sanderling and the knot—were found breeding

* Mr. Seebohm apparently overlooked the fact that Middendorff found the nest of the grey plover on the Taimyr peninsula in 1843, and figured the egg in his *Sibirische Reise*, Bd. II., Th. 2, plate 19, Fig. i. *Tringa minuta* was also found nesting, though its eggs were not figured, by the same traveller.—ED.

by Captain Fielden, in lat. 82° , during the Nares Arctic expedition, but the breeding-grounds of the curlew sandpiper still remain a mystery.* We added several birds to the European list, which had either never been found in Europe before, or only doubtfully so; such as the Siberian chiffchaff, the Petchora pipit, the Siberian herring-gull, the Arctic forms of the marsh-tit and the lesser spotted woodpecker, the yellow-headed wagtail, and the Asiatic stonechat. We brought home careful records of the dates of arrival of the migratory birds which breed in these northern latitudes, besides numerous observations on the habits of little-known birds. Our list of skins brought home exceeded a thousand, and of eggs rather more than six hundred.

The number of species which we obtained was comparatively small, the whole of our collecting having been done north of latitude 65° . The Arctic regions are frost-bound for eight months out of the twelve, and buried under a mantle of snow varying in depth from three to six feet. During this time they are practically barren of ornithological life; the small number of birds which remain within the Arctic circle forsake the tundras where they breed, to find feed in the pine-forests at or near the limit of forest growth, a few only remaining where the shelter of a deep valley or watercourse permits the growth of a few stunted willows, birches, and hazel bushes. Practically it may be said that there is no spring or autumn in the Arctic regions. Summer follows suddenly upon winter, and the forests and the tundra as suddenly swarm with bird-life. Although the number of species breeding within the Arctic circle is comparatively small, the number of individuals is vast beyond conception. Birds go to the

* Mr. H. Leybourne Popham afterwards obtained the eggs of the curlew sandpiper on the Yenesei, *vide* "Proc. Zoolog. Soc." 1897, p. 891, pl. li.—ED.

Arctic regions to breed, not by thousands, but by millions. The cause of this migration is to be found in the lavish prodigality with which Nature has provided food. Seed- or fruit-eating birds find an immediate and abundant supply of cranberries, crowberries, and other ground fruit, which have remained frozen during the long winter, and are accessible the moment the snow has melted; whilst insect-eating birds have only to open their mouths to fill them with mosquitoes.

Of the 110 species which we obtained, the following are circumpolar birds, breeding both in the eastern and western hemispheres, being nearly one-third of the total number :—

Osprey.	Sanderling.
Peregrine Falcon.	Shoveller Duck.
Snowy Owl.	Pintail Duck.
Short-eared Owl.	Scaup Duck.
Raven.	Golden-eyed Duck
Pine Grosbeak.	Long-tailed Duck.
Mealy Redpoll.	Goosander.
Lapland Bunting.	Red-breasted Merganser.
Snow Bunting.	Arctic Tern.
Shore-lark.	Great Black-backed Gull.
Bohemian Waxwing.	Glaucous Gull.
Sand Martin.	Richardson's Skua.
Willow-grouse.	Buffon's Skua.
Grey Plover.	Red-throated Diver.
Red-necked Phalarope.	Black-throated Diver.
Dunlin.	

It will be observed that more than half of these species are water birds, showing that the communication between the Palæarctic and the Nearctic regions has been one of water rather than of land.

The following species are confined to the continents of Europe and Asia, and range throughout the Arctic regions of the eastern hemisphere from the North Cape to Bering's Strait. A few of these are occasionally found in Greenland and in Alaska, but are not found in the intermediate or Nearctic regions, though many of them are there repre-

sented by very nearly allied species, showing that the communication across the Pole has been interrupted at a comparatively modern geological epoch:—

White-tailed Eagle.	Skylark.
Hobby.	Red throated Pipit.
Merlin.	Green Wagtail.
Goshawk.	Blue-throated Warbler.
Sparrow-hawk.	Wheatear.
Hen-harrier.	Lapp Tit.
Eagle-owl.	Common Swallow.
Black Woodpecker.	Hazel Grouse.
Three-toed Woodpecker.	Little Ringed Plover.
Cuckoo.	Oystercatcher.
Magpie.	Greenshank.
Siberian Jay.	Wood Sandpiper.
Tree Sparrow.	Curlew Sandpiper.
Scarlet Bullfinch.	Spotted Redshank.
Brambling.	Common Sandpiper.
Reed-bunting.	Bar-tailed Godwit.
Ruff.	Teal.
Temminck's Stint.	Wigeon.
Common Snipe.	Tufted Duck.
Great Snipe.	Velvet Scoter.
Whimbrel.	Black Scoter.
Common Crane.	Smew.
Wild Swan.	Common Gull.
Bean-geese.	

From the length of this list it might be reasonable to assume that ornithologists are right in separating the Ne-arctic region from the Palearctic region, and that it would be an error, even as far as Arctic birds only are considered, to unite the two together into one circumpolar region. A more minute examination of the list may, however, lead us to a different conclusion. It is not correct to speak of a bird as an Arctic species unless its breeding-grounds are principally within the Arctic circle. We must, therefore, eliminate from our list those species whose breeding-grounds are principally south of the Arctic circle, and only extend beyond it at the extreme northern limit of their range. This will dispose of thirty of the species we

have enumerated, leaving only seventeen, of which at least two-thirds are represented in the Nearctic region by very closely allied species. Of the half-dozen species which may be said to belong especially to the eastern Polar region, every one is represented by a species in the western Polar region belonging to the same genus.

The following species range from Scandinavia eastwards as far as the watershed between the Yenesei and the Lena. The proportionate length of this list shows that this boundary is almost as important a one as Bering's Strait, especially when we consider that several enumerated in the second list cross over into Alaska. On the other hand, we must not forget that our knowledge of the birds of the country east of the Yenesei is very limited :—

Rough-legged Buzzard.	Redstart.
Hooded Crow.	Willow-warbler.
Jackdaw.	Sedge-warbler.
House Sparrow.	Capercaillie.
Northern Bullfinch.	Black Grouse.
Tree Pipit.	Golden Plover.
White Wagtail.	Dotterel.
Fieldfare.	Ringed Plover.
Redwing.	Little Stint.

The dotterel and the Little stint are the only species in this list of which it can be said that their principal breeding-grounds are north of the Arctic circle. The nearest relations of the former species are undoubtedly to be found in the southern Palæarctic region, whilst the genus to which the latter belongs is well represented in the Polar regions of both continents.

Two species only appear to range from Scandinavia eastwards as far as the valley of the Ob, but do not cross the watershed into the valley of the Yenesei :—

Rook.	Yellowhammer.
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The Ural Mountains, although they are the boundary between political Europe and Asia, are by no means so

geographically or ornithologically. So far as we know, one species only of the Petchora birds recognises this chain as the eastern limit of its range, viz. :—

Meadow Pipit.

Four species ranging westward from Kamtschatka throughout Arctic Siberia and across the Ural Mountains, do not appear to advance farther into Europe, during the breeding season, than the valley of the Petchora :—

Siberian Pipit.

Yellow-headed Wagtail.

Siberian Stonechat.

Bewick's Swan.

Six species, ranging westward from Kamtschatka throughout Arctic Siberia and across the Ural Mountains, appear to extend beyond the valley of the Petchora as far as the White Sea, viz. :—

Siberian Lesser-spotted Woodpecker.

Little Bunting.

Arctic Willow-warbler.

Marsh-tit (eastern form).

Terek Sandpiper.

Siberian Herring-gull.

One bird only appears to be so restricted in its geographical range as to be found only in the valleys of the Petchora, the Ob, and the Yenesei, viz. :—

Siberian Chiffchaff.

Of the fourteen birds included in the last four lists, only four or five have their principal breeding-grounds within the Arctic circle, and these all belong to genera which are represented in the Nearctic region, with the exception of the Arctic willow-warbler, which has been obtained in Alaska.

The final conclusion to which we must therefore arrive, from a study of the geographical distribution of the birds found in the valley of the Petchora, is that a circumpolar region ought to be recognised : that so far

as the Polar regions are concerned the division into Nearctic and Palæarctic is a purely arbitrary one.

The migration of birds is a subject which interests all naturalists, and is a very attractive one to a great number of persons who do not pretend to any scientific knowledge of ornithology. The dates and order of arrival of migratory birds present so many points of interest that, for the sake of comparison, the following list has been made of all those birds which we had reason to believe to be migratory in the Ust-Zylma district, leaving out those to which, from their rarity or localness, considerable doubt attaches as to their date of arrival :—

April 1.	Snow-bunting.	May 18.	Lapland Bunting.
„ 1.	Mealy Redpoll.	„ 18.	Whimbrel.
May 4.	Hen-harrier.	„ 18.	Teal.
„ 5.	Merlin.	„ 20.	Willow-warbler.
„ 10.	Bean-goose.	„ 20.	Wheatear.
„ 10.	Shore-lark.	„ 21.	Crane.
„ 10.	Snowy Owl.	„ 22.	Siberian Chiff-chaff.
„ 11.	Wild Swan.	„ 22.	Siberian Stonechat.
„ 11.	Bewick's Swan.	„ 23.	Short-eared Owl.
„ 11.	Siberian Herring-gull.	„ 23.	Blue-throated Warbler.
„ 12.	White Wagtail.	„ 24.	Brambling.
„ 12.	Redstart.	„ 24.	Pine-grosbeak.
„ 12.	Meadow-pipit.	„ 26.	Oyster-catcher.
„ 13.	Pintail and other Ducks.	„ 26.	Ringed Plover.
„ 13.	Peregrine Falcon.	„ 26.	Wood-sandpiper.
„ 14.	Reed-bunting.	„ 26.	Temminck's Stint.
„ 15.	Common Gull.	„ 26.	Common Swallow.
„ 17.	Golden Plover.	„ 31.	Little Bunting.
„ 17.	Fieldfare.	June 3.	Cuckoo.
„ 17.	Redwing.	„ 3.	Double Snipe.
„ 17.	Red-throated Pipit.	„ 3.	Terek Sandpiper.
„ 17.	Green Wagtail.	„ 3.	Black-throated Diver.

This list is necessarily very imperfect. In addition to the difficulty of ascertaining the date of arrival of rare or local birds, we had a still greater difficulty to contend with. There can be no doubt that Ust-Zylma lies somewhat out of the line of migration, which is

probably determined largely by the direction of the great valleys. Birds from the Mediterranean might fairly be supposed to reach the Volga *viâ* the Bosphorus, the Black Sea, the Sea of Azov, and the river Don to Sarepta. The natural course of birds from India and Persia would be to the Volga by way of the Caspian Sea. The line of migration would probably follow the Volga to Kasan,



OUR HEADQUARTERS AT UST-ZYLMA

and thence along the Kama to Perm and Cherdin, close to the source of the Petchora. The course would then continue down the Petchora as far as its junction with the Ussa. It would then be reasonable to conclude that the hardy species, which migrate early, would have plenty of time to go round by Ust-Zylma ; whilst the later arrivals would leave the Petchora at Ust-Ussa, and cross direct to the tundra. For example, the snow-bunting, hen-harrier, merlin, bean-geese, shore-lark, snowy owl, wild swan, Bewick's swan, and herring-gull

are probably amongst the earliest breeders on the tundra, and pass through Ust-Zylma, whilst the later breeders on the tundra are not there at all. The following birds are all summer migrants to the tundra, but were not seen passing through Ust-Zylma during migration :—

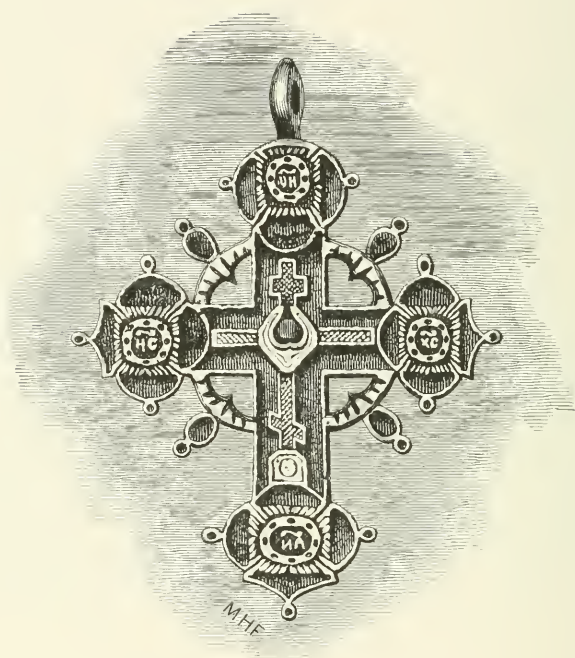
Yellow-headed Wagtail.
Arctic Tern.
Siberian Pipit.
Red-necked Phalarope.
Long-tailed Duck.
Buffon's Skua.
Grey Plover.

Dunlin.
Richardson's Skua.
Dotterel.
Sanderling.
Curlew Sandpiper.
Little Stint.

Most of these are very late-breeding birds, but why they should breed late, or for what cause they seem to choose a different line of migration, seems at present inexplicable. Before a conclusion can be arrived at many more facts must be collected. The field of ornithological research is one in which any amount of work may be advantageously done, and possibly the perusal of the present narrative may help to arouse the enthusiasm of other adventurous ornithologists, and induce them to take up the running where we left it off.



OLD RUSSIAN SILVER CROSS



OLD RUSSIAN SILVER CROSS

PART II

THE YENESEI



CAPTAIN WIGGINS

CHAPTER XXIV.

SIBERIA AND SEA-TRADE.

Sir Hugh Willoughby's Voyage to Novaya Zemlya—Ancient Voyages across the Kara Sea—Modern Voyages across the Kara Sea—Captain Wiggins's Voyage in 1876—Ornithological Arctic Expeditions—Letters of Introduction from Count Schouvaloff—Recent Expeditions to Siberia—Nordenskiöld's Voyage.

BEFORE beginning the story of my Yenesei expedition, a few words on the history of the opening-up of this region are necessary.

Three hundred years ago, when Ivan the Terrible reigned over Russia, and the Slav and Tatar races were struggling in mortal combat, a peaceful expedition left the shores of Britain under the command of Sir Hugh Willoughby. Three ships were sent to the Arctic region on a wild-geese chase after the semi-fabulous land of Cathay—a country where it was popularly supposed that the richest furs might be bought for an old song, where the rarest spices might be had for the picking, and where the rivers rippled over sands of gold. Like so many

other Arctic expeditions, this proved a failure. Poor Sir Hugh Willoughby, it is supposed, discovered one of the islands of Novaya Zemlya, but was afraid to winter there, and landed on the Kola peninsula, where he and all his crew were starved to death.

Another ship belonging to the same expedition, commanded by Richard Chancellor, was more fortunate. It was separated from the others by a heavy storm, and driven by contrary winds into the White Sea. Chancellor not only saved his ship and the lives of his crew, but discovered Archangel, which subsequently became a little English colony. At that time the inhabitants of Archangel were actually carrying on a trade with this wonderful land of Cathay. In their flat-bottomed *lodkas*, sewn together with willow roots, they skirted the east coast of the White Sea, and dragged their boats across the Kanin peninsula. They coasted the southern shores of the Arctic Ocean, and passing through the Kara gates, entered the Kara Sea. On the Yalmal peninsula they found a river, the head of which brought them to a narrow watershed, across which they again pushed their boats, coming to another river, which brought them into the gulf of the Ob. Crossing this gulf they entered the gulf of the Taz, at the head of which was the once famous town of Mangaze, where a great annual fair was held. This fair was frequented by merchants who brought tea, silks, and spices down the Ob and the Yenesei to barter with the Russian merchants, who returned to Archangel the same season.

In the struggle for existence which commenced on the opening out of the port of Archangel to British commerce, according to the inevitable law of the survival of the fittest, this Russian maritime enterprise languished and finally died, and thenceforth the inhabitants of the

banks of Dvina received their silks and their tea *viâ* the Thames instead of the Ob and the Yenesei ; and ever since that time the commercial world seems to have taken it for granted that the Kara Sea was unnavigable, and that the Kara gates were closed by impenetrable bars of ice.

Latterly considerable efforts have been made, principally by Professor Nordenskiöld of Stockholm and Captain Wiggins of Sunderland, to re-open this ancient route, and to re-establish a trade with Siberia *viâ* the Kara Sea. In 1874 Captain Wiggins chartered the well-known Arctic steam yacht *Diana*, and passing through the Kara gates, explored the entrance to the Ob and the Yenesei, and returned to England in safety. In 1875 Professor Nordenskiöld chartered a walrus-sloop at Hammerfest, and entering the Kara Sea through the Matoshkin Skar, landed in the gulf of the Yenesei. The walrus-sloop returned to Europe in safety, leaving the Professor to make his way up the river in a boat as far as Yeneseisk, whence he returned to Stockholm by the overland route.

In 1876 both these gentlemen attempted to take a cargo to Siberia by the Kara Sea. Professor Nordenskiöld was the first to arrive, and fortunately failing to find a channel up the Yenesei deep enough for his steamer, he landed his goods at a little village called Koreopoffsky, about a hundred miles up the Yenesei, and returned to Europe without any mishap. Captain Wiggins was less fortunate. He left Sunderland on the 8th of July in the *Thames*, Arctic steam yacht (120 tons), and entered the Kara Sea on the 3rd of August. The ice prevented him from sailing direct to the mouths of the great rivers, so he spent some time in surveying the coast and the Baideratskerry Gulf, and did not reach the mouth of the Ob until the 7th of September. Here he lay at anchor some time in the hope that a favourable

wind might enable him to ascend the Ob against the strong current; but the weather proving tempestuous and the wind contrary, he abandoned the attempt, and ran for the Yenesei. He commenced the ascent of this river on the 23rd of September, and after a tedious voyage, struggling against contrary winds and shallow water, he finally laid his vessel up on the Arctic Circle, half a mile up the Kureika and 1200 miles from the mouth of the Yenesei, on the 17th of October. The following morning the ship was frozen up in winter quarters. A room in a peasant's house on the banks of the river, looking down on to the ship, was rigged up for the crew, and as soon as the ice on the river was thick enough to make sledging safe, Captain Wiggins returned to England by the overland route.

Hearing that Captain Wiggins was in England, and likely to rejoin his ship, with the intention of returning in her to Europe through the Kara Sea, I lost no time in putting myself in communication with him. I was anxious to carry our ornithological and ethnological researches a step further to the eastward, so as to join on with those of Middendorff, Schrenck, and Radde in East Siberia. I made the acquaintance of Captain Wiggins on the 23rd of February, and came to the conclusion that an opportunity of travelling with a gentleman who had already made the journey, and consequently "knew the ropes," might never occur again. Captain Wiggins told me that it was his intention to start from London on the return journey in three days. I finally arranged with him to give me five days to make the necessary preparations for accompanying him. I wrote to Count Schouvaloff, who had given Harvie-Brown and myself excellent letters of introduction on our Petchora journey, asking him to be kind enough to send to my rooms in London similar letters for

my proposed Yenesei expedition, and all those who know the value of such documents in Russia will appreciate my gratitude to his Excellency for his kindness in furnishing me, at a moment's notice, with letters of intro-



OSTIAKS OF THE OB

duction to General Timarscheff, the Minister of the Interior at St. Petersburg, which proved of the greatest service to me on my long and adventurous journey.

The details of this journey, how we travelled nearly six thousand miles to the ship, and how we lost her, and had to travel home again by land, form the subject of the following pages. The reader may, however, feel some

interest in following the narrative of the attempts to explore the North-East Passage after the loss of the ill-starred *Thames*.

The success of Captain Wiggins in reaching the Yenesei in 1876 encouraged two steamers to make the attempt in the following year, the year of our disasters. The *Louise* succeeded in ascending the Ob and the Irtysh as far as Tobolsk, where she wintered, returning with a cargo in safety the following autumn. The *Frazer* reached Golchika on the Yenesei, where a cargo of wheat ought to have met her, but in consequence of the cowardice or the blunders—not to say the dishonesty—of the persons in charge, the cargo never arrived, and the steamer was forced to return empty.

Notwithstanding his misfortunes, Captain Wiggins stuck bravely to his enterprise, and 1878 saw him again in the Ob with a steamer, the *Warkworth*, drawing twelve feet of water. The navigation of the lagoon of the Ob is attended with considerable difficulty. Sand-banks are very numerous. The regular tide is very unimportant, and the normal condition of the river in autumn is a slow but steady fall from the high level of the summer flood to the low level of winter. Abnormal conditions of great importance to navigation, however, continually occur. A strong south wind accelerates the fall of the river, whilst a violent north wind backs up the water and causes the river to rise many feet. When the *Warkworth* arrived at the last great sandbank forming the bar, she was stopped for want of water. A large praam laden with wheat awaited her at Sinchika, a small port on the south-east of the gulf, forty miles beyond Nadim, the most northerly fishing station of the Ob. Captain Wiggins lost some time in searching for a channel, but fortunately before it was too late a cold north wind set in, backed up the

waters of the Ob, and enabled the *Warkworth* to cross the bar and anchor within sight of the praam. There was no time to be lost. The ship dared not venture on shallower water, so the praam had to leave her haven of shelter and trust herself to the swelling waves. She was probably three or four hundred feet long, only pegged together, with ribs fearfully wide asunder, and commanded by a captain chicken-hearted as Russian sailors alone can be; but though she writhed like a sea-serpent by the side of the steamer, the operation proved successful, and Captain Wiggins turned his face homewards with the wheat on board. The cream of the success was, however, skimmed at the bar. Two hundred tons had to be thrown overboard before the deep channel could be reached, but the bulk of the cargo was brought safe into London.

The seasons of 1879 and 1880 were unfavourable. Long-continued east winds drove the remnants of the Kara Sea ice against the shores of Novaya Zemlya, and a narrow belt of pack-ice blocked the Kara gates. Late in the season of 1879 a Bremen steamer succeeded in finding a passage, and in bringing a cargo of wheat from Nadim. It was very fortunate that the English steamers were unable to enter the Kara Sea. Drawing fourteen to seventeen feet of water, they had literally no chance at all where Wiggins only saved himself by the skin of his teeth, not drawing more than twelve feet.

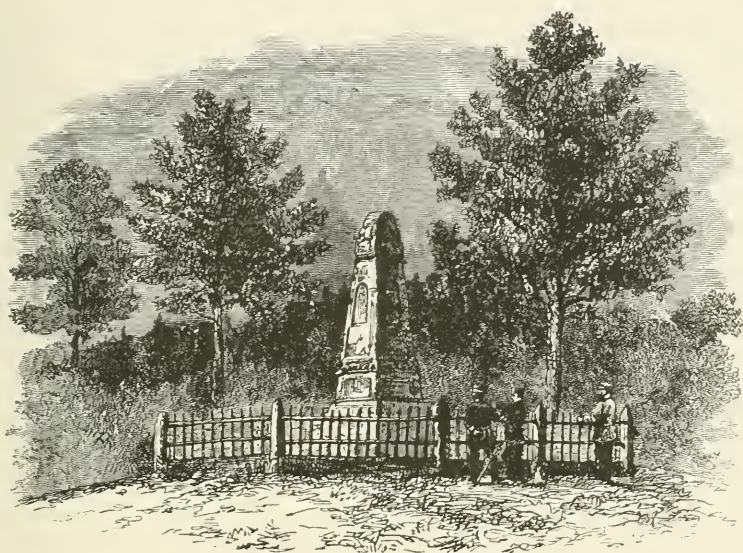
The crowning feat of this north-east Arctic enterprise was performed by Nordenskiöld in the *Vega* in 1878-79, a voyage which may not, perhaps, have any great commercial value, but in a scientific point of view must rank as one of the most successful Arctic expeditions ever made.

Captain Palander left Gothenburg on July 14, 1878, was joined by Nordenskiöld at Tromsö on the 21st, and

entered the Kara Sea on the 1st of August. On the 5th they passed the mouth of the Yenesei, and held a clear course until the 12th, when they encountered drift-ice and fogs, but succeeded in reaching the North-east Cape in lat. $77\frac{1}{2}^{\circ}$ on the 19th. On the 27th they passed the mouth of the Lena, but with September their troubles began. On the 3rd the thermometer for the first time fell below zero, and they were compelled to hug the coast. On the 6th the nights became too dark to permit of safe navigation, and the ice thickened so rapidly that on the 12th, at Cape Severni, they were delayed for six days. On the 19th they made fifty miles, but during the next six days their progress was very slow, the ship having continually to battle with thick ice, and on the 28th they were finally frozen up in winter quarters in lat. $67^{\circ} 70'$, having failed to accomplish the 4000 miles from Tromsö to Bering Strait by only 120 miles. The greatest cold they had during the winter was in January, when the thermometer fell to 74° below zero. On May 15th the ice was $5\frac{1}{2}$ feet thick. The *Vega* got away on July 18th, having been frozen in nine months and twenty days, and on the 20th she sailed through Bering Strait, returning to Gothenburg by the Suez Canal, after having circumnavigated Europe and Asia for the first time in the history of the human race.



SAMOYEDE PIPE



BOUNDARY BETWEEN EUROPE AND ASIA

CHAPTER XXV.

FROM LONDON TO OMSK.

At St. Petersburg—Political Feeling in Russia—Feeling against England—Russian Arguments against the Policy of England—At Moscow—Irkutsk and the Siberiaks—At Nishni Novgorod—The Journey before Us—Our Sledge—Birds—At Kazan—Roads between Kazan and Perm—At Perm—At Kongur—The Urals—Birds—We Enter Asia—Ekaterinburg—Tiumen—The Steppes—Villages of the Crescent and the Cross—Russian and Mahomedan Clergy—Cheap Provisions—Birds.

WE left London on Thursday, the 1st of March, 1877, at 8.25 P.M., and reached Nishni Novgorod on Saturday the 10th at 10 A.M., having travelled by rail a distance of 2400 miles. We stopped three days in St. Petersburg to present our letters of introduction, and to pay some other visits. We had audiences with the Minister of the Interior and with the Minister of Finance, both of whom

showed great interest in Captain Wiggins's attempt to re-open a trade with Siberia by sea.

At a dinner-party given in our honour at Sideroff's, the well-known concessionnaire of the Petchora, and on various occasions in our hotel and in the cafés, we had abundant opportunity of informing ourselves of the state of political feeling in St. Petersburg. Russia was by no means on the best of terms with England. The Panslavistic party was in the ascendency. As a stepping-stone to its wild scheme of reversing the policy of Peter the Great, and making Russia a great southern power, embracing all the Slavonic nations, it continually urged the government to lay violent hands on Turkey and wrest from her her Slavonic provinces. The military party, always on the *qui vive* for a chance of obtaining promotion and loot, had joined the hue and cry. The wily diplomatists of St. Petersburg partly under the influence of the old tradition of Russian aggrandisement, and possibly far-seeing enough to perceive that the logical outcome of Panslavism would be a United Slavonia, in which Poland would eventually play the part of Prussia encouraged the agitators. They shrewdly calculated that whatever might become of Turkey in Europe, some share of the spoil of Turkey in Asia must fall into Russian hands; and that if they only gave the Panslavistic party rope enough it would be sure to hang itself. On the peasantry, absolutely ignorant of European politics and anxious for peace to develop their rising commerce and agriculture, religious fanaticism was brought to bear in favour of war. The moment seemed ripe for action, but England, under the vigorous policy of Lord Beaconsfield, stopped the way. We found the feeling against England amongst the merchants very sore. Even the better educated Russian is remarkably ignorant of European politics. He

has a smattering of knowledge and a rudimentary appreciation of logic just sufficient to enable him to express his opinions in syllogistic form. The line of argument which we had to meet and combat was ingenious and plausible ; we never once were able to convince an opponent that it contained a single fallacy. The greatest astonishment was expressed that England should want to prop up such a rotten government as that of Turkey. We were assured that a Christian country like England could not possibly love the Turks any more than the Russian could, and that England, that had always been the champion of freedom, could never permanently uphold the slavery of the Slavonic races in Turkey. The explanation of these anomalies was an amusing mixture of truth and error, but so firmly had it taken possession of the popular mind of the day, that nothing that we could say in answer made the slightest impression. The arguments used against us ran pretty much in one strain. Lord Beaconsfield was a Jew. The Jewish party was in power. England had, politically, entirely succumbed to Jewish influences. The Jewish party was the money-lending party. The money-lending party was the creditor of Turkey. England, therefore, under the malign influence of her Jewish prime minister, upheld the integrity of Turkey solely that the Jewish creditors of that anti-Christian and despotic state might obtain as many shillings in the pound as possible from their bankrupt debtor. We could only shrug our shoulders and reflect that a little logic, as well as a little knowledge, is a dangerous thing.

When we left St. Petersburg the weather showed signs of breaking, and we reached Moscow in a complete thaw. As we had a sledge journey before us of between three and four thousand miles, which we hoped to get

through before the roads became impassable, we made as short a delay in Moscow as possible. A few hours rest gave us an opportunity of visiting the British Consul and of enjoying the hospitality of a wealthy Russian merchant of the name of Trapeznikoff. The latter gentleman entertained us in his splendid mansion, and we had a very interesting conversation with him. We had now fairly turned our backs upon Europe and European politics, and discussed Siberian topics only. Mr. Trapeznikoff is a Siberiak, born at Irkutsk, and takes a prominent part in the efforts which the Moscow Geographical Society are making to rival the attempts of Captain Wiggins to open up sea communication between Europe and Siberia. Mr. Trapeznikoff was one of the comparatively few Russian merchants with whom we came in contact who were able to converse in German. The more we heard of Irkutsk the more disappointed we were that we had not time to make a *détour* to this interesting town. It is not a large place, but we were told that the population was upwards of 30,000. Though situated in the heart of Siberia, it is said to be the most European town of all the Russias. We were informed that in Irkutsk we should find the freest thought, the highest education, the most refined civilisation, the least barbarous luxury of any Russian town.

We reached Nishni Novgorod on Saturday the 10th of March, and were officially received at the railway station by the chief of police, who was kind enough to conduct us across the Volga to a hotel. We devoted the morning to the purchase of a sledge, and spent some time in buying a stock of provisions for the road, but evening saw us fairly under way. We had a long and adventurous affair before us, a sledge journey of more than three thousand miles. We hoped to cross the meridian of

Calcutta, 2300 miles north of that city, before the roads broke up, and then to sledge nearly a thousand miles due north, before entering the Arctic Circle. Our sledge was something like a cab on runners, with an empty space under the driver's seat to enable us to stretch our legs at night. We sledged away, day and night, with three horses abreast, stopping to change them every fifteen to twenty miles, with bells tinkling to drive away the wolves. At first our road was down the Volga, and we travelled smoothly along with no greater misfortune than an occasional run through a snow swamp where the thaw had been greatest; but on some of the banks we were knocked about unmercifully, the motion of the sledge resembling that of a boat in a short choppy sea. It was late in the year, and the roads were worn out.

On Sunday we dined at Vassilla. There had been some frost during the night, but it was thawing rapidly at noon. Birds were plentiful for the time of the year. Hooded crows, jackdaws, and house-sparrows were very common, and I saw one flock of snow-buntings. Vassilla is a large town about half-way to Kasan, the distance from Nishni to Kasan being 427 versts, about 280 miles.

We continued to sledge thus down the frozen Volga, travelling day and night, with occasional snowstorms and a persistent thaw. The left bank of the river as we travelled down was comparatively flat, but the other bank was hilly. This is the case with the Petchora, and also with the Ob and the Yenesei. There was very little change in the birds on the roadside. House-sparrows, jackdaws, and hooded crows were the commonest. Once I saw a pair of ravens, and once a solitary great tit, and at a station 61 versts before we reached Kasan tree-sparrows were feeding with the house-sparrows. On the banks of the Volga were numerous holes, evidently

the nests of colonies of sand-martins, and occasionally magpies were seen. We did not make any stay in Kasan, but without delay on the evening of our arrival we took a *padarozhnaya* for Ekaterinburg, 942 versts, or 628 miles, paying, as before, 4 kopeks per verst per horse.

The first night's journey from Kasan was a fearful pull and jolt. The weather was mild, with snow, but the state of the roads was inconceivably bad. We were dashed about to such an extent that in the morning every bone in our bodies ached. No constitution in the world could stand a week of such ill-usage. Before sunrise the thermometer had fallen to zero. This was followed by a magnificent sunshiny morning, and very fair roads. I saw a pair of bullfinches for the first time since leaving Nishni.

The next morning the weather still continued fine, but the roads were never good for long at a time. We had got into a hilly country, which was very picturesque, but not at all conducive to the maintenance of good roads, especially so late in the season.

We passed through Perm late in the evening of Thursday the 15th of March, and were glad of an excuse to rest a few hours on Friday at Kongur. At this town we were most hospitably entertained by Mr. Hawkes, who showed us over his iron steamship building yard. The father of Mr. Hawkes was an enterprising Scotchman, who established a flourishing business in this remote corner of Europe. Shortly after bidding our host a reluctant adieu, we commenced the ascent of the Ural mountains. In this part the range scarcely deserves to be regarded as more than a succession of hills, the loftiest hardly high enough to be dignified with the name of mountain. The country reminded me very much of that in the neighbourhood of the Peak of Derbyshire.

For several hundred versts we sledged up one hill and down another, occasionally following the valleys between. In the lowlands we frequently passed villages, and a considerable part of the country was cultivated. For miles together the road passed between avenues of birches. The hills were covered with forests, principally Scotch and spruce fir, with a few birches and larches. During this part of our journey we had magnificent weather ; hard frost but warm sunshine. Birds were more abundant, one of the commonest being the large bullfinch with a brick-red breast. Hooded crows were, perhaps, less frequent, but on the other hand ravens and magpies were much commoner, and jackdaws remained as numerous as ever. I noticed several small birds which I had not seen before—greenfinches, yellow-hammers, marsh tits, and one or two jays.

A few stages before reaching Ekaterinburg we left the last hill of the Urals behind us, and an easy slope brought us out of the forests to a more cultivated and level country, in which the villages were more plentiful. As we passed the granite pillar which marks the boundary line between the two continents, we hoped that we had left the mists and fogs of Europe behind us to enter the pure and dry climate of Asia. We reached Ekaterinburg on the morning of Sunday the 18th of March, having been 123 hours sledging 628 miles, about five miles an hour, including stoppages. We changed horses sixty-five times. Ekaterinburg has about 30,000 inhabitants. We were most hospitably entertained by M. George Onésime Clerc, the head of the Observatory, to whom I had a letter of introduction from M. Bogdanoff, of St. Petersburg ; we also visited M. Vinebourg, an official of the telegraph-office and an excellent amateur ornithologist, who went with us to the museum.

Time did not, however, admit of our making much delay. We were anxious to cover as much ground as possible whilst the frost lasted, and we bade a hasty adieu to our friends. The same afternoon we took a *padarozhnaya* for Tiumen, and made the 306 versts, or 204 miles, in twelve stages, which we accomplished in thirty-nine hours. The country was gently undulating and well wooded, with numerous villages.

We spent a couple of days at Tiumen enjoying the hospitality of Mr. Wardroper, a Scotch engineer ; with him we visited M. Ignatieff, and lunched at his house with some of the merchants of this thriving place. The river was full of steamers, all frozen up in their winter quarters, and everything told of commerce and wealth. The house of Ivan Ivanovich Ignatieff was a handsome mansion elegantly furnished in the German style, just such a house as a North German family with an income of 600*l.* or 700*l.* a year inhabit. We had a quiet but substantial luncheon—roast-beef and claret, roast grouse and sherry, ice-cream and champagne. One of the guests was a magnificent specimen of a Russian, standing 6 ft. 8 in., and weighing, we were told, twenty-two stone.

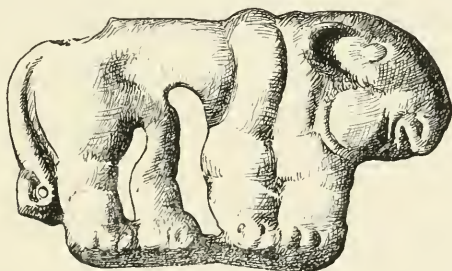
From Tiumen to Omsk is 637 versts, which we accomplished in sixty-two hours, changing horses twenty-seven times. It was quite holiday travelling ; we had good horses and excellent roads. The scene was entirely changed. We were now crossing the great steppes of western Siberia. We had left the Peak of Derbyshire behind us, and were traversing an almost boundless Salisbury Plain. For nearly a thousand miles hardly anything was to be seen but an illimitable level expanse of pure white snow. Above us was a canopy of brilliantly blue sky, and alongside of us a line of telegraph poles crossed from one horizon to the other. Occasionally we came upon a small plantation of

stunted birches, and every fifteen to twenty miles we changed horses at some village built on the banks of a frozen river whose waters find their way into the Ob beneath their thick armour of ice. These villages were almost entirely built of wood, floated down in rafts from the forests on the distant hills. Most of them were Russian, with a large stone or brick church in the centre, and a gilt cross on the steeple. Others were Tatar villages, where the crescent occupied the place of the cross ; and it was somewhat humiliating to us as Christians to find that the cross was too often the symbol of drunkenness, disorder, dilapidation, and comparative poverty, whereas the crescent was almost invariably the sign of sobriety, order, enterprise, and prosperity. The general opinion amongst the better educated Russians with whom I was able to converse was that the chief fault lay with the priests, who encouraged idleness and drunkenness, whilst the Mohammedan clergy threw the whole of their influence into the opposite scale. Living is so extravagantly cheap in this part of the world that the ordinary incentives to industry scarcely exist. We were able to buy beef at twopence per pound, and grouse at sevenpence a brace. We had a very practical demonstration that we were in a land flowing with hay and corn, in the price we paid for our horses. Our sledge was what is called a troika and required three horses. Up to Tiumen these horses had cost us sixpence a mile. On the steppes the price suddenly fell to three-halfpence, *i.e.*, a halfpenny a horse a mile. At one of the villages where we stopped to change horses it was market-day, and we found on inquiry that a ton of wheat might be purchased for the same amount as a hundred-weight cost in England.

Whilst we were crossing the steppes we saw very few birds. The almost total absence of trees and the depth

of the snow upon the ground is, of course, a sufficient explanation why birds cannot live there in winter. Occasionally we saw small flocks of snow-buntings, whose only means of subsistence appeared to be what they could pick up from the droppings of the horses on the road. These charming little birds often enlivened the tedium of the journey, flitting before the sledge as we disturbed them at their meals. They were rapidly losing their winter dress. They only moult once in the year—in autumn. In the winter the general colour of the snow-bunting is a buffish brown. After the autumn moult each feather has a more or less broad fringe of buffish brown, which almost obscures the colour of the feather lying below it. The nuptial plumage is assumed in spring by the casting of these fringes, which appear to dry up and drop off, whilst at the same time the feathers appear to acquire new life and the colour to intensify, as if in spring there was a fresh flow of blood into the feathers, somewhat analogous to the rising of the sap in trees, which causes a fresh deposit of colouring matter. The snow-buntings we saw on the sledge-track across the steppes had nearly lost all the brown from their plumage, their backs were almost black, as were also the primary quills of their wings, whilst the head and under-parts were nearly as white as the snow itself, and at a distance one might often fancy that a flock of black butterflies was dancing before us. The snow-bunting had an additional charm for us from the fact that it is a winter visitor to England whose arrival is always looked for with interest, and a few pairs even remain to breed in the north of Scotland. It is remarkable as being the most northerly of all passerine birds in its breeding range, having been found throughout the Arctic Circle wherever land is known to exist. The only other birds we saw on the steppes were

a few sparrows, jackdaws, and hooded crows in the villages. The bullfinches and the tits disappeared with the trees, and the summer birds had not yet arrived, though Mr. Wardroper at Tiumen told us that starlings, rooks, geese, and ducks were all overdue. It was, perhaps, fortunate for us that the season was an unusually late one, otherwise the roads might have been in many places impassable.



BRONZE ORNAMENT FROM ANCIENT GRAVE NEAR KRASNOYARSK



SLEDGING IN A SNOW-STORM

CHAPTER XXVI.

DOWN RIVER TO THE KAMIN PASS.

Omsk—From Omsk to Tomsk—Sledging—Birds—Tomsk—Tomsk to Krasnoyarsk—Birds—Krasnoyarsk—Prices—Beaten by the South Wind—Frost again—Birds—Yeneseisk—Our Visitors—Scientific Expeditions—Birds—Our Lodgings—Easter-day Festivities—I Hire a Young Jew—Lessons in Bird-skinning—New Sledges—Down the Precipices—Russian Hospitality—Special Couriers—Deceptive Appearance of the Road—Winding Roads—Epidemic among the Horses—Race with the South Wind—The Kamin Pass—Stopped by the Rain—The Kamin Pass in December—The Pass in April—The South Wind Beaten.

I HAD a letter of introduction from General Timarscheff, the Minister of the Interior, to the Governor-General of West Siberia in Omsk. Unfortunately the Governor was from home, but his wife received us very kindly. Her Excellency spoke good French and German, and had an English governess for her children. M. Bogdanoff, in

St. Petersburg, had given me a letter of introduction to Professor Slofftzoff, who found for us a friend of his, Mr. Hanson, a Dane, to act as an interpreter. Professor Slofftzoff is an enthusiastic naturalist. He showed us a small collection of birds in the museum. Among these were several which have not hitherto been recorded east of the Ural Mountains, for example the blackcap, the garden-warbler, and the icterine warbler; but as there are no special labels with these specimens to authenticate the localities, the fact of their really having been shot in the neighbourhood of Omsk must be accepted with hesitation. In museums which profess to be local only, birds from distant localities continually creep in by accident, and many errors in geographical distribution are thus propagated.

I gave the Professor some Sheffield cutlery in exchange for a curiously inlaid pipe of mammoth-ivory and a flint and steel, the latter inlaid with silver and precious stones. He told me that both were made by the Buriats in the Transbaikal country, but the pipe is not to be distinguished from those made on the tundras of the north, and I suspect it to be of Samoyede origin.

Twenty years ago Omsk was only a village; now it has thirty to forty thousand inhabitants. This increase is very largely accounted for by the fact that the seat of government has in the meantime been removed thither from Tobolsk. From Omsk to Tomsk is 877 versts, or 585 miles, which we accomplished in eighty-five hours, including stoppages—an average of $10\frac{1}{4}$ versts an hour. We changed horses thirty-seven times. We had now got into the full swing of sledge travelling: snow, wind, rain, sunshine, day, night, good roads, bad roads—nothing stopped us; on we went like the wandering Jew, only with this difference, that we had a fixed goal. However rough the road might be, I could now sleep as soundly

as in a bed. My sledge fever was entirely gone. I began actually to enjoy sledge travelling. I found a pleasant lullaby in the never-ceasing music of the "wrangling and the jangling of the bells." After having sledged 2762 versts, or 1841 miles, one begins to feel that the process might go on *ad infinitum* without serious results.

The weather was mild, with no absolute thaw, but now and then we had snow-storms, generally very slight. Our way lay across flat steppes with scarcely a tree visible, until we came within 150 miles of Tomsk, when we again passed through a hilly, well-wooded country, like an English park. We saw the same birds as heretofore, with an occasional hazel-grouse and great tit. On the steppes snow-buntings were, as before, very common. On the whole the roads were good: indeed, in the flat district, very good.

In Omsk I had seen some very curious Kirghis arms at Professor Slofftzoff's, and I had vainly tried to purchase some. In Tomsk I learned that Barnaul was the place to obtain them. There is a museum in that town. I was told that M. Bogdanoff, a mining engineer, and M. Funck, a shot-maker, spoke German, and further, that there is an antiquary of the name of Goulaieff. Tomsk is a very business-like place, apparently about the same size as Omsk. From Tomsk to Krasnoyarsk is 554 versts, or 369 miles, which we accomplished in sixty-four hours and in twenty-seven stages. The weather was very mild, and we had several slight falls of snow. The country was generally hilly and well-wooded, and the roads on the whole good, but occasionally we found them extremely bad. After the 27th of May (15th Russian style) we had to pay for an extra horse, and upon entering the Yeneseisk Government, the cost of

each horse was doubled. Magpies were as common as ever; jackdaws much less so. Hooded crows disappeared soon after leaving Tomsk. Ravens were rather more numerous than before. Bullfinches were plentiful in the woods, and snow-buntings on the plains. The great tit was only occasionally seen. House-sparrows were very common, but we saw no tree-sparrows. We reached Krasnoyarsk on Monday the 2nd of April, and paid our first visit to Herr Dorset, the government "Vet." of the district. He was a German, and kindly placed himself at our disposal as interpreter. He introduced me to a M. Kibort, a Polish exile, who engaged to procure me skins of birds, and send them to England. We visited the governor, who gave me a "*Crown padarozhnaya*," and an open letter of introduction to all the officials. In Krasnoyarsk prices were as follows:—

Wheat	40 kop. per pood.
Flour	60 " "
Swan's-down	12 to 15 rbl. "
Goose-down	8 rbl. " "
Feathers	3 rbl. " "
Pitch	3 to 3½ rbl. "
Hemp seed	20 kop. "

We spent the evening at the house of Sideroff's agent, Mr. Glayboff. We also bought some fine photographs of the gold mines and other places.

A warm south-west wind blew all Sunday, and continued during the night. In Krasnoyarsk we found the streets flooded, and everybody travelling upon wheels. In the evening the post refused us horses on the plea that sledging was impossible. There was nothing for it but to go to bed. In the morning the south-west wind was as warm as ever. The red hills of Krasnoyarsk were almost bare. We were obliged to take to wheels, and organise a little caravan. Equipage No. 1 was a

rosposki, on which our empty "pavoska" was mounted, a yemschik standing on the box at the back, and driving his three horses over the top. Equipage No. 2 was a *tarantass*, with two horses, drawing our luggage. Equipage No. 3 was another *tarantass*, containing Captain Wiggins and myself. We got away about 11 A.M., and trundled along over snow, mud, grass, or gravel up the hill, through a series of extempore rivers, and across the steppes—a wild bleak country, like a Yorkshire moor—for 35 versts, at an expense of fifteen roubles. The next stage was 28 versts. The road was a little better. We dismissed the *rosposki*, and travelled in the otherwise empty sledge, but retained one *tarantass* for our luggage. This stage cost us six roubles. Night came on, and after a squall of wind, snow, and sleet, it grew a little colder. The next stage was 23 versts. We travelled as on the last, but transferred our luggage from the *tarantass* to a sledge. We had reached the forest, the roads soon became better, the wind got more northerly, the night was cooler, and we got off for four roubles. At the end of this stage we repacked our sledge, got horses at the regular price of three kopeks per verst per horse, and matters began steadily to improve. Our five horses were soon knocked down to four, and finally to three. What little wind there was blew cold, the sky was clear, the sun shone brightly, and all our troubles were over for the present. The road became excellent. The country was hilly, and the scenery grew once more like an English park with fine timber. We might easily have fancied ourselves in the Dukeries in Nottinghamshire. Hooded crows had entirely disappeared, but the carrion crow was several times seen. In the evening we dined at a roadside station, kept by a Jew. We had potato soup and fish,

two spoons, but only one plate. We reached Yeneseisk at 9 A.M. on Thursday the 5th of April, having been nearly forty-eight hours in travelling 330 versts, in consequence of the thaw in the earlier part of the journey. There were thirteen stages in all.

Arrived at Yeneseisk we took rooms at the house of a M. Panikoroffsky, and enjoyed a few days rest. We had brilliant sunshine, with the thermometer at or near zero, and we were told that there was no great hurry, that we might expect to have a month's frost in which to travel to Turukansk.

By this time we had sledged 3646 versts, or 2431 miles, and had fairly earned a rest. We had plenty of visitors. First, there was Mr. Boiling, a Heligolander, who left his native island thirty-five years ago. He was a boat-builder who spoke German very well and knew enough English to make his way. Then there was M. Marks, a Pole, an elderly man, a political exile. He was a photographer, a dealer in mathematical instruments, an astronomer, a botanist, had had a university education, and spoke French, though somewhat rustily. A most active, useful little man was the head of the police, who offered to do anything for us, but unfortunately he only spoke Russian. Then there was Schwanenberg, the captain of Sideroff's schooner, who was on his way down the river. He spoke English and German. The telegraph-master also spoke German, so that altogether we had no difficulty in finding society.

There were very few birds at Yeneseisk during our stay. Magpies were plentiful. There were no jackdaws. House- and tree-sparrows were very abundant, and in equal numbers. The carrion crow was very common. Boiling told me that about three years ago a pair or two of hooded crows paid a visit to Yeneseisk, and were most

hospitably received by their black cousins, so much so that they allowed them to intermarry in their families. The consequence now is that perhaps seventy-five per cent. of the Yeneseisk crows are thorough-bred carrion crows, five per cent hooded crows, and twenty per cent, hybrids of every stage between the two. Middendorff, however, mentions the interbreeding of these birds as long ago as 1843, so Boiling's story must be taken for what it is worth. Now and then we saw a great tit, and flocks of redpolls and snow-buntings frequented the banks of the river, the latter bird, we were told, having only just arrived.

Our lodgings were very comfortable. The sitting-room was large, with eight windows in it, of course double. The furniture was light and elegant. A few pictures, mostly coloured lithographs, and two or three mirrors ornamented the walls; and a quantity of shrubs in pots materially assisted the general effect: among them were roses, figs, and geraniums.

Whilst we were resting at Yeneseisk the great festival of Easter took place. Every Russian family keeps open house on that day to all their acquaintances. The ladies sit in state to receive company, and the gentlemen sledge from house to house making calls. A most elaborate display of wines, spirits, and every dish that is comprised in a Russian *zakuska*, or foretaste of dinner, fills the sideboard, and every guest is pressed to partake of the sumptuous provisions. Captain Wiggins had made a good many acquaintances during his previous visit to Yeneseisk, so that we had an opportunity of seeing the houses of nearly all the principal merchants and official personages in the town. Some of the reception-rooms were luxuriously furnished.

The most important business which claimed my

attention in Yeneseisk was the selection of a servant. On the whole I was most fortunate. All to whom I mentioned my requirements shook their heads and told me it was a hopeless case. Of course I wanted as good a servant as I could get, honest, industrious, and so forth. Two qualifications were a *sine quâ non*. He must be



FISHING STATION ON THE OB

able to skin birds, and speak either French or German. I soon learned that there was not a single person in Yeneseisk who had ever seen a bird skinned for scientific purposes. After many fruitless inquiries, I at last succeeded in finding a young Jew of the name of Glinski, about four and twenty years of age, who three months before had married the daughter of the Israelitish butcher in Yeneseisk. Glinski spoke bad German and bad Russian, and had an inconvenient habit of mixing up

Hebrew with both these languages, but on the whole I might have had a worse interpreter, as he did his best to translate faithfully what my companion for the time being said, instead of telling me what, in his (the interpreter's) opinion my companion ought to have said, as too many interpreters are in the habit of doing. Nevertheless, Glinski was, without exception, one of the greatest thick-heads that I have ever met with. He was an exile from the south of Russia. At fourteen years of age he had committed some crime—stolen and destroyed some bills or securities for which his father was liable—and had spent some years in prison. He was afterwards exiled, and his term of exile had just expired. He had scarcely any notion of arithmetic, and his other acquirements were so scanty that he was continually chaffed even by the simple-minded Russian peasants. He was very short-sighted, but clever with his fingers. I asked him if he thought he could learn to skin birds. He said he thought he could, but should like to see how it was done. I skinned a couple of redpolls in his presence, and gave him a bullfinch to try his hand on. With a little help and instruction he made a tolerable skin of it. We afterwards skinned a few birds together at various stations on the journey, and when we arrived at our winter quarters I turned over this part of my work entirely to Glinski. At the end of a week he could skin better and quicker than I could, and on one occasion, as will be hereafter recorded, he skinned forty-seven birds for me in one day. I always found him industrious, honest, and anxious to do his best. He asked me twenty roubles a month wages, I of course paying his board and lodging and travelling expenses. I agreed to these terms, and promised also an additional bonus of ten kopeks per skin. During the time that Glinski was with me he

skinned for me more than a thousand birds, for which I paid him over a hundred roubles, besides his wages, but for all that I am told that since I left Yeneseisk he has abused me roundly to my friends there because I refused to lend him fifty roubles more when I parted from him. No one must expect gratitude from a Russian Jew.

Another important business which I transacted in Yeneseisk was the purchase of a ship. Boiling had a schooner on the stocks, which had been originally intended to bring to Yeneseisk the cargo which Professor Nordenskiöld left at Koreopoffsky. Other arrangements were made by which Kitmanoff was to bring these goods up in his steamer, and the schooner was sold to me. Captain Wiggins undertook to rig it at the Kureika, where it was to be delivered by Boiling as soon as the ice broke up. Boiling and I were to sail in her a thousand miles down the Yenesei to Dudinka, ornithologising as we went along, whilst Captain Wiggins went up the Kureika to take on board a cargo of graphite, which Sideroff's plenipotentiary, Captain Schwanenberg, was to have ready for him. In Dudinka the schooner was to be disposed of on joint account, or kept as a second string to our bow across the Kara Sea, as circumstances might render desirable.

The addition of Glinski to our party also made fresh arrangements for travelling necessary. Now that there were three of us, we required two sledges. We were told that the roads were bad, and that the sledge we had bought in Nishni Novgorod was too heavy for the roads north of Yeneseisk. We accordingly bought a couple of light sledges, mere skeletons of wood covered with open matting. One of them, which Captain Wiggins and I reserved for ourselves, had an apology for a hood.

We had arrived at Yeneseisk in a hard frost, but before we had been there three days the south wind overtook us. The snow began to melt, and taking fright at once, we left at 11 o'clock on the evening of Monday the 9th of April. For the first few stations the road was through the forests or along the sloping banks of the river, and we thought ourselves fortunate if we did not capsize more than half a dozen times between two stations. Afterwards our path was down the river, a splendid road as long as we kept on it, perfectly level, except on arriving at a station, where we had to ascend from the winter level of the ice to the villages, which are built on the bank above the level of the summer floods. The villagers generally came out to meet us, and help us up the steep ascent. The assistance they gave us in descending was still more important. It sometimes almost made our hearts jump into our mouths to look down the precipice which led to the road. We commenced the descent with three or four peasants holding on to each side of the sledge. As the pace became fast and furious, one or two of our assistants occasionally came to grief, and had a roll in the snow, but the help they rendered was so efficient that we ourselves always escaped without an accident.

In spite of the thaw, and the consequent bad roads, we made seventy-eight versts the first night, and were entertained by an official whom we had met at the house of the Ispravnik in Yeneseisk. As is always the case in Russia, we were very hospitably received, and on taking leave of the Zessedatel, we were provided with a courier. The Easter holidays were not yet over, and we might have difficulty or delay in obtaining horses. This courier accompanied us to the "grenitza," or boundary of the province of Yeneseisk, a distance of about 300 versts.

About 200 versts before reaching Turukansk we were met by a cossack, who brought us a letter from the Zessedatel of that town, informing us that he had sent us an escort to assist us on our way.

The thaw had cut up the roads a good deal. We had generally three, rarely only two, frequently four, and sometimes five horses in our sledge, but in all cases they were driven tandem. The smaller sledge was driven with two, and occasionally three horses. Although to all appearances the road was a dead level from one to two miles wide, it was in reality very narrow, in fact too narrow for a pair of horses to run abreast with safety. We were really travelling on a wall of hard trodden snow from five to seven feet wide, and about as high, levelled up on each side with soft snow. Whenever we met a peasant's sledge, the peasant's poor horse had to step off the road, and stand on one side up to the traces in snow. After our cavalcade had gone by, it had to struggle on to the road again as best it could. Our horses were generally good and docile, and they kept the road wonderfully, though it sometimes wound about like a snake. A stranger might naturally wonder for what inscrutable reason such a tortuous road should be made along a level river. It was carefully staked out with little bushes of spruce fir, from two to five feet high, stuck in the snow every few yards. The explanation is very simple. When Captain Wiggins travelled up the river in December, little or no snow had fallen. At the beginning of the winter the ice breaks up several times before it finally freezes for the season. When the roads were first staked out by the *starrosta* of the village, the little bushes that now reared their heads above the snow were trees eight to twelve feet high, and the road had to be carefully picked out between shoals and hills

of ice-slabs lying scattered about in every direction. After the winter snow had fallen we could see nothing of all this, except the tops of the trees. Everything was buried to a depth of six feet. Our horses got well over the ground, and for two-thirds of the way we averaged a hundred and fifty versts in the twenty-four hours; but on the sixth, seventh, and eighth days of our journey from Yeneseisk to Turukansk we passed through a district where an epidemic had prevailed amongst the horses. Here we were obliged to travel slowly, and frequently had to wait for horses at the stations, so we consequently only scored about half our previous average. These epidemics amongst the cattle occur with some regularity every spring, or, to speak more correctly, during the last month or two of winter, for in these latitudes there is no spring. The cause is not very far to seek. It is unquestionably insufficient food. The corn has been finished long ago, and the hot sun and occasional thaws have caused the hay to foul.

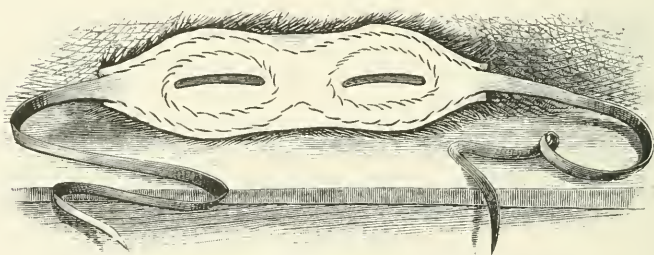
On this journey we had the same variable weather as heretofore. Since leaving Krasnoyarsk we had been racing the south wind. A couple of days after leaving that town we thought we had fairly beaten it, but we had not been two days in Yeneseisk before it again overtook us. We had no absolute rain, however, until we reached the entrance to the Kamin Pass, not far from the point where the Kamina Tungusk joins the Yenesei. This pass is twenty versts in length, and is extremely picturesque. The river here flows through a comparatively narrow defile, between perpendicular walls of what looked like mountain limestone rock. This is considered the only dangerous part of the journey. The channel is deep and tortuous, and the current so rapid that open water is visible in places even in the hardest winters.

We reached the station at the entrance of this pass in the evening. A heavy gale from the south-west was blowing, and the rain was beating loudly against the windows of the station-house. We were told that it was impossible to proceed, and that we must remain in our present quarters until a frost should set in. We were not sorry to be compelled to take a night's rest, but the prospect of having to stop a week or two until the weather changed was not pleasant. The south wind seemed to have completely beaten us, and we went to bed somewhat disheartened. When we woke the next morning we heard the wind still howling. We were making an effort to be resigned to our fate, and as a preliminary step we turned out to inspect our sledges, and see if our baggage had escaped a complete soaking. We were, however, soon driven in again. Although the wind was still blowing hard, it had shifted a point or two, and cut like a knife. The rain was all gone, the snow was drifting in white clouds down the pass, and a thermometer placed outside the window sank to 3° above zero. As the mercury fell our spirits rose; with the thermometer 29° below freezing point the worst roads must be safe, so we ordered our horses, breakfasted, and were soon in the Kamin Pass.

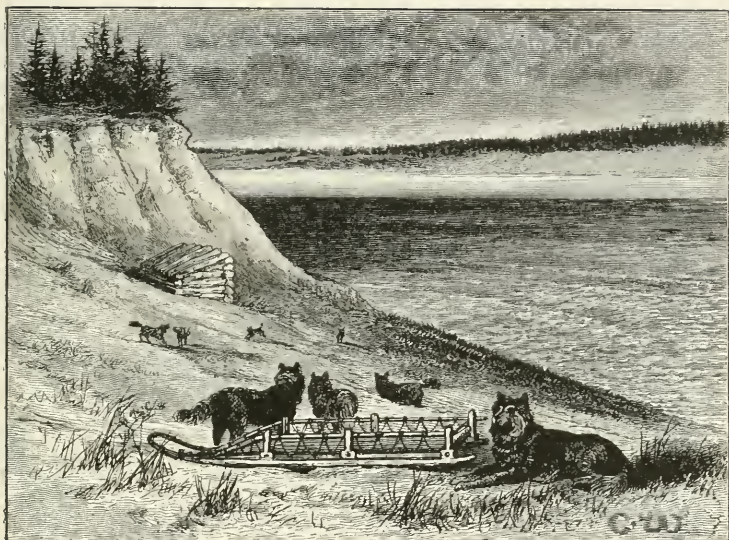
When Captain Wiggins came through this pass in the previous December it was on a brilliantly sunshiny day. The blue ice was then piled in fantastic confusion on each side. The snow had not then fallen and buried the signs of the skirmishes which had taken place between the river and winter, before the latter finally conquered. The thermometer was below zero, and the sunshine glistened on the frozen waterfalls that hung down the cliffs like young glaciers, and clouds of dense white steam were rising from the open water in the centre

of the river. We saw it under very different circumstances. The strong wind was driving the fine drifted snow in clouds down the pass, and everything was wrapped in haze. A thin band of open water rippled black as we passed by. The scene was fine and constantly changing, and reminded me very much of the Iron Gates on the Danube.

During the rest of the journey we had no more anxiety on the score of weather. Once or twice the south wind overtook us again, but we had at length reached a latitude in which we could afford to laugh at our old enemy. Whatever attempts he made to stop us with rain only ended in snow, and we found that a thin sprinkling of snow on the hard crust of the road was rather advantageous to rapid travelling than otherwise. It was like oil to the runners of our sledge.



SAMOYEDE SNOW SPECTACLES



SIBERIAN DOG SLEDGE

CHAPTER XXVII.

TURUKANSK AND THE WAY THITHER.

Stations—Hospitality of the Peasants—Furs and their Prices—Dogs Drawing Sledges—Birds—Visit to a Monastery—Graphite—Captain Wiggins's Former Travelling Companion—An Honest Russian Official!—Installed as Guests in the House of the Zessedatel—Turukansk—We Turn Shop-keepers—The Skoptsi—Scarcity of Birds—Old Gazenkampf—Our Host's Tricks—The Blagachina—The Second Priest—The Priest's Accomplishments—The Postmaster—The Secretary of the Zessedatel—Schwanenberg's Troubles.

THE distance from Yeneseisk to Turukansk is 1084 versts, or 723 miles. The road is divided into forty-four stages, which we accomplished in nine days and ten nights. The stations where we changed horses were frequently in villages containing not more than half a dozen houses. Those we visited were always scrupulously clean, and everywhere we were most hospitably received. The best the peasants had was placed before us—tea,

sugar, cream, bread, and occasionally soup, fish, beef, or game. Frequently we were treated as guests, and our offers of payment refused. The yemschiks, or drivers, were always very civil, and some of the younger ones were fine-looking fellows. However numerous our horses were, we only paid for three, at the rate of three kopeks per verst per horse, to which we added vodka money—ten kopeks to each yemschik. At most of the houses furs were to be bought. I picked up a fine bear-skin, for which I paid six roubles: ermine was to be had in almost any quantity at from ten to fifteen kopeks a skin. Squirrel* was even more abundant at about the same price. Skins of a light-coloured stone-marten,† which the peasants called *korlornok*, were occasionally offered to us at fifty kopeks to a rouble each. I bought two gluttons' skins, one for four and the other for five roubles. Otter and blue fox‡

* The grey squirrel (*Sciurus vulgaris*) is a Palæarctic quadruped, being represented on the American continent by a closely allied form (*Sciurus hudsonius*). In the British Islands only the red variety occurs, but in Siberia every intermediate form is found between red and grey squirrels.

† The beech-marten (*Martes foina*) has been recorded as a British quadruped, but recent investigations seem to have proved that the pine-marten (*Martes abietum*) is the only species found in our islands. Both species are strictly palæarctic, and neither of them is found on the American continent; indeed, it is doubtful if their range extends into Asia. In Siberia they are represented by the allied species (*Martes sibirica*) mentioned above.

‡ The blue fox, as it is called in its summer dress, when it is of a bluish-grey colour, or the arctic fox, as it is called in the snow-white winter dress (*Vulpes lagopus*), is a circumpolar quadruped. The Siberian merchants in Yeneseisk, as well as the Hudson Bay merchants in London, maintain the distinctness of the two forms, and attempt to prove their statements by producing both summer and winter skins of each. A possible explanation is, that like the stoat, the arctic fox changes the colour of its fur with the seasons throughout the greater part of its range; but towards the northern limit of its distribution the summers are so short that it is not worth while for it to turn dark, whilst towards the southern limit of its range snow does not lie long enough on the ground to make the whiteness of the fur protective. My impression is, however, that the blue fox is a variety of the arctic fox, bearing somewhat the same relation to the latter form as the black fox does to the red fox. It is difficult to explain otherwise the facts that skins of blue fox are obtained very far north, and those obtained in winter have very glossy, long, and thick fur.

were offered at ten to twelve roubles, and white fox at three to five roubles. We made many inquiries for sable* and black fox, but did not succeed in ever seeing any. They are all carefully reserved for the Yeneseisk merchants, who no doubt would be very angry if they heard of any of these valuable skins "going past" them. We were told that the price of sable was twenty-five roubles and black fox double that price or more. The beaver has been extinct on the Yenesei for many years. We bought a few skins of red fox † with wonderfully large brushes, and the general colour a richer and intenser red than ours, the price varying from two to four roubles.

As we got further north we found fine dogs at the stations, and occasionally we met a sledge drawn by dogs. These animals are most sagacious. A Russian traveller will hire a sledge with a team of six dogs, travel in it ten or fifteen miles to the next station, where he gives the dogs a feed, and sends them home again alone with the empty sledge. On several occasions we met teams of dogs returning alone with the empty sledges. They are fine fellows, a little like a Scotch shepherd's dog, but

* The sable (*Martes zibellina*) is only found in Siberia, being represented in America by a nearly allied species (*Martes americana*), which is said to differ from its Siberian cousin both in the form of the skull and the shape of the teeth. There is little or no difference in the general appearance of the two species, and they are subject to much the same variation in the colour and quality of the fur, though I have never seen skins from Hudson Bay in which the hairs were as long or as thick as in Siberian skins, nor are the American skins ever quite so dark as the finest Asiatic ones, though when dyed it is sometimes difficult to detect the difference at a glance. The price of sables in St. Petersburg, at the best shops, varies from £2 to £25 each, according to quality. The quality at £6 (60 roubles) is, however, rich enough and dark enough for ordinary use.

† The red fox (*Vulpes vulgaris*) is a circumpolar quadruped. The Arctic form is of a richer, deeper red than that found in more temperate regions, and has longer hair and a much more bushy tail. On both continents a melanistic form, called the black or silver fox, occasionally occurs, the silver fox having white tips to the black hairs. In St. Petersburg, fine skins of the silver fox fetch £25, but the best skins of black fox are sold as high as £50.

with very bushy hair. They have sharp noses, short straight ears, and a bushy tail curled over the back. Some are black, others white, but the handsomest variety is a grey-fawn colour. Another sign of having entered northern latitudes met us in the appearance of snow-shoes, and occasionally our yemshiks would run on them at the sides of the sledge for a mile or more together.

We had very little opportunity of seeing the birds of the district, as our road was almost always on the river. Sparrows and magpies disappeared before we reached the Kamin Pass. At most stations carrion crows and snow-buntings were seen, and now and then a raven flew over our heads. We were often offered willow-grouse, capercailzie and hazel-grouse, but we very seldom saw these birds alive. Seven hundred versts north of Yeneiseisk the nutcracker appeared. At most stations one or two of these birds were silently flitting round the houses, feeding under the windows amongst the crows, perching on the roof or on the top of a pole, and if disturbed, silently flying, almost like an owl, to the nearest spruce, where they sat conspicuously on a flat branch, and allowed themselves to be approached within easy shot. I secured eight of them without difficulty. In the summer this river must be a paradise for house-martins. At every station the eaves of the houses were crowded with their nests, sometimes in rows of three or four deep. Two hundred versts south of Turukansk I bought the skin of a bittern which had been shot during the previous summer. The only four-footed wild animal we saw was a red fox.

Thirty versts from Turukansk we stopped to inspect a monastery. Two hundred and fifty years ago the ancient town of Mangaze, at the head of the gulf of the Taz, was destroyed by the Cossacks. An attempt was

made to remove the annual fair which used to be held at Mangaze a degree or two to the east. The village now known as Turukansk was founded under the name of Novaya Mangaze. The relics of the patron saint of the monastery of the old town were mostly destroyed by fire. The monastery was rebuilt a little to the south of New Mangaze, opposite the junction of the Nishni Tungusk with the Yenesei, and hither such of the relics of St. Vasili as survived the fire were removed. They consist of an iron belt with iron shoulder-straps called a Tikon, and a heavy iron cross, which it is said the saint wore as a penance. In a small building outside the church is a cast-iron slab covered with Slavonic inscriptions, which is said to be his tombstone. Such is the story, at least, which the Bishop told us through the medium of my thick-headed interpreter. At the station where we changed horses, close by the monastery, we were shown some samples of graphite, which was said to come from the Nishni Tungusk river, and appeared to be of excellent quality.

When Captain Wiggins came through Turukansk the previous autumn, he had the misfortune to pick up as a travelling companion an adventurer of the name of Schwanenberg, a Courlander who spoke German and English. Schwanenberg's great object was to secure a monopoly of the trade by sea between Europe and Siberia for his master Sideroff, and so to twist every little success of Captain Wiggins that it might redound to the honour and glory of Sideroff. The consequence was that he caused Captain Wiggins to commit a grave indiscretion. The cargo which Captain Wiggins had picked up in Sunderland was landed from the *Thames* packed on sledges, and the caravan, headed by Schwanenberg, commenced a triumphal march up country. Un-

fortunately, Captain Wiggins fell into the trap, and made matters ten times worse by hoisting the Union Jack. The Zessedatel of Turukansk was naturally astounded at such extraordinary proceedings, and from excess of zeal impounded the goods and refused horses to the travellers. After a desperate quarrel, nearly ending in bloodshed, in which the Blagachina and the Postmaster conspired against the Zessedatel, the travellers proceeded to Yeneseisk, leaving the goods behind them. The Zessedatel had other enemies. Two of the principal merchants of the Lower Yenesei, who shall be nameless—I call them the arch-robbers of the Yenesei—joined the conspiracy. The Zessedatel was too honest; he would not accept the bribes which these worthies pressed upon him in order to blind his eyes to their nefarious and illegal practices. The upshot of it all was, that when Captain Wiggins and Schwanenberg passed through Krasnoyarsk they were able to bring so much pressure to bear upon the good-natured Governor that the Zessedatel of Turukansk was removed from his office, and when we arrived at this Ultima Thule we found that a new Zessedatel reigned in his place. This gentleman had received orders from head-quarters to assist Captain Wiggins to the utmost of his power, and had also been advised of my intended visit. The Cossack who escorted us for the last two hundred versts had strict orders to bring us to the Zessedatel's house, and we were immediately installed as his guests. He placed his dining-room at our disposal, and we occupied the two sofas in it at night. We tried hard to avoid trespassing upon his hospitality, but he would take no refusal.

Turukansk is a very poor place, built on an island. It may possibly consist of forty to fifty houses. Most of these are old, and the whole place bears an aspect of

poverty. We met no one who could speak English, French, or German, and we probably saw most of the inhabitants. The Zessedatel gave back to Captain Wiggins possession of his goods, and placed at his disposal an empty house, where the Captain displayed them and kept open shop for a couple of days. Glinski and I helped him, to the best of our ability, to measure ribbons, printed calicoes, and silks, and though more people came to see the goods than to buy, we nevertheless all had to work hard. Captain Wiggins was, I am sure, heartily sick of his job, and many times, I have no doubt, devoutly wished his wares were in Kamtschatka. They were mostly consignments from Sunderland shopkeepers, which the Captain, in a rash moment, induced these tradesmen to entrust to his care. Most of the goods were utterly unsuited to the market, and many of them seemed to me to be priced at more than double their value in England. In spite of this we sold some hundred roubles' worth at prices yielding a profit of ten to fifty per cent.

Among the people who came to inspect the goods was a smooth-chinned, pale-faced man, who we found on inquiry was one of the Skoptsi, a strange sect of fanatics who have made themselves impotent "for the kingdom of heaven's sake." They live in a village sixteen versts from Turukansk in four houses, and are now reduced to ten men and five women. They were exiled to this remote district as a punishment for having performed their criminal religious rite. Most of them come from the Perm government. They occupy themselves in agriculture, and in curing a small species of fish like a herring, which they export in casks of their own manufacture.

We saw very few birds in Turukansk ; two or three

pairs of carrion crows seemed to be the only winter residents. I saw no other birds, except a flock of snow-buntings, which, we were informed, had not long arrived. House-martins come in summer, as their nests bore ample evidence. We were told that these birds arrive in Turukansk during the last week in May, old style—that is, the first week in June of our style.

We left Turukansk at five o'clock on the afternoon of Sunday the 22nd of April. We were not sorry to escape from the clutches of our host, A man with such a faculty for annexing adjacent property I never met with before. He was interesting as a type of the old-fashioned Russian official, ill-paid, and sent by the Government to an out-of-the-way place to pay himself—a wretched system. A more shameless beggar never asked alms. Old von Gazenkampf—for this was his name—might have been sixty-five years of age. He had imposed himself and his Cossack servant on a well-to-do widow, who boarded and lodged the pair gratis, but sorely against her will. She dared not refuse them anything, and was afraid to ask for payment. I asked our host to choose a knife or two out of the stock I brought with me for presents ; he immediately took six of the best I had, and the day following asked me for a couple more to send to a friend of his at Omsk. He offered me a pair of embroidered boots for six roubles. I accepted the offer. He then said that he had made a mistake, and that he could not sell them, because he had promised to send them to his friend in Omsk. Half an hour afterwards he offered me the same pair for twelve roubles ; I gave him the money, and packed them up for fear his friend in Omsk should turn up again, and I might have to buy them the next day for twenty roubles. From Captain Wiggins he begged all sorts of things, annexed many more without asking, and

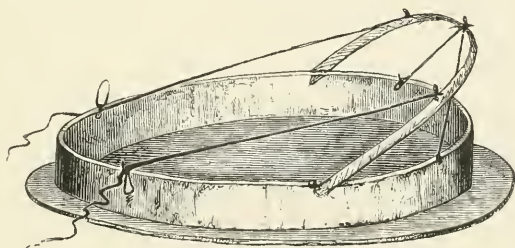
finally begged again and again for his friend in Omsk. It was very amusing and—very expensive ; otherwise the old buffer was as jolly as possible, talked and laughed and made himself and us at home, gave us the best he (or rather the widow) had, and kissed us most affectionately at parting.

The Blagachina was a tall, comparatively young man, with long flowing hair parted in the middle. He was a widower. So far as we could see he appeared to be a true man, anxious to do all the good that lay in his power and to give us every information possible. He was very kind and generous to us, and invited us several times to his house ; but he had the too common Russian failing of being fonder of vodka than was consistent with due sobriety.

The second priest was a teetotaler, a small, keen-eyed man, with an excellent wife and a row of charming children. He had a turning-lathe in his house, and was skilful in making cups, boxes, etc., out of cedar and mammoth-ivory. He had been amongst the Ostiaks of the Taz, and had visited the ruins of the ancient town of Mangaze. He was something of an ethnologist and archæologist, and made very fair pencil sketches. I rather liked him, but Captain Wiggins thought him something of a Jesuit, poking his nose into everything, ubiquitous, and taking upon himself to answer every question, no matter to whom addressed. He had taken the side of the deposed Zessedatel in the quarrel between that gentleman and the two captains in the previous year, and so had incurred the anger of the postmaster and the Blagachina, who nicknamed him the "Thirteenth Apostle." From what I afterwards learned, I am, however, disposed to think he was in the right. The postmaster appeared to be a good-natured fellow, a

bit of a sportsman, but of the heavy-brained type of Russian. The secretary of the Zessedatel was a Pole, a very intelligent man ; he dined with us every day and appeared to be hand in glove with von Gazenkampf, but we heard later that he was very anxious to escape from his bondage. No wonder ! To be compelled to live in such a miserable place is exile indeed. After we had left I had a peep behind the scenes of Russian official life in Turukansk. Captain Schwanenberg told me all the troubles he had to endure in this place the week before we arrived. As Sideroff's agent it was part of his duty to obtain a certificate from the Zessedatel of Turukansk, testifying that this worthy official had visited the graphite mines of Sideroff on the Kureika and satisfied himself that a definite amount of graphite had been dug from them. Without such a certificate Sideroff's monopoly to procure graphite from these mines would lapse. The Russian Government, in order to encourage the development of the mineral resources of the country, very liberally grants to the discoverer of a mine a right of private property in it, but very justly it requires the mine to be worked in order to maintain this right. The difficulties that Schwanenberg had to contend with were threefold. First, the mine had, in fact, been standing idle a sufficient length of time to vitiate Sideroff's claim to it ; second, it had never been visited by the Zessedatel ; and third, Schwanenberg had contracted with Sideroff to take all the necessary steps to secure his rights. Old von Gazenkampf was quite prepared to sign everything that Schwanenberg required, and a sum had been agreed upon as the price of the Zessedatel's conscience ; but at the last moment the mysterious friend in Omsk had turned up, and poor Schwanenberg had to part with his watch-chain and the rings off his fingers, at which he was

secretly very angry, as he assured me that Sideroff would never recoup him for these losses. The Nihilists blame the Emperor for all this sort of plundering, but most unjustly. No Government can command honesty in its servants unless it is supported by public opinion, and hitherto public opinion in Russia remains on the side of the successful thief. I need only point out the fate of old Gazenkampf's predecessor to show how impossible it is for an honest official to live in the present atmosphere of commercial morality in Russia. Let us hope that the valley of the Yenesei is exceptionally bad in this respect. It is not at all improbable that the demoralisation which usually emanates from gold-mines may be an important factor in the case. Peculation has undoubtedly been overdone in this district. The officials are gradually killing the geese that lay the golden eggs; the villages are dwindling away; Turukansk is only the wreck of what it once was, and when one looks at the tumble-down church and the few miserable straggling houses that nowhere else would be called a town, one wonders how Turukansk ever came to be printed in capital letters in any map.



OSTIAK CRADLE



INSIDE AN OSTIAK CHOOM

CHAPTER XXVIII.

OUR JOURNEY'S END.

Soft Roads—Sledging with Dogs—Sledging with Reindeer—We reach the *Thames*—Cost of Travelling—The Yenesei River—Good Health of the *Thames* Crew—Precautions against Scurvy—Fatal Results of Neglect—Picturesqueness of our Winter Quarters—View from the House—Through the Forest on Snowshoes—Birds—The Nutcracker—Continued Excursions in the Forest—Danger ahead.

THE road from Turukansk to the Kureika is very little frequented. So far to the north, the traffic has dwindled down to almost nothing, consequently the snow never gets trodden down hard, and sledging in heavy *sankas* is impossible. We were therefore obliged once more to abandon our sledges and to have still lighter ones. As there were only four stages, we decided to hire them from stage to stage and repack our baggage into fresh sledges at each station. We had the remains of the

captain's merchandise to take with us, so we required six sledges, each drawn by one horse. The first stage was on land, wearisomely long, with bad roads and worse horses; the second stage was on the river, a much better road, but, in consequence of bad horses, very slow. The baggage was packed as before, on three one-horse sledges. To each of our three sledges, containing also a fair share of baggage, were harnessed six dogs. They went splendidly, never seemed tired, and never shirked their work. The pace was not rapid, but at the next stage we had to wait an hour for the horses with the baggage. The harness was simple in the extreme, consisting merely of a padded belt across the small of the back, and passing underneath between the hind legs.

The two last stages were travelled with reindeer. We had six sledges, as before, for ourselves and the baggage, and four sledges for our drivers. Each sledge was drawn by a pair of reindeer, so that we required twenty reindeer to horse our caravan. This was by far our fastest mode of travelling. Sometimes the animals seemed to fly over the snow. During the last stage the reindeer that drew my sledge galloped the whole way without a pause! The journey from Turukansk to the Kureika is 138 versts, and occupied about twenty-two hours.

We reached the winter quarters of the *Thames* on Monday, April 23rd, at three o'clock in the afternoon, delighted once more to be amongst English voices and English cooking. We had sledged from Nishni Novgorod to the Kureika, a distance of 4860 versts, or 3240 English miles. Including stoppages, we had been forty-six days on the road, during which we had made use of about a thousand horses, eighteen dogs, and forty reindeer. The total number of stages was 229. My

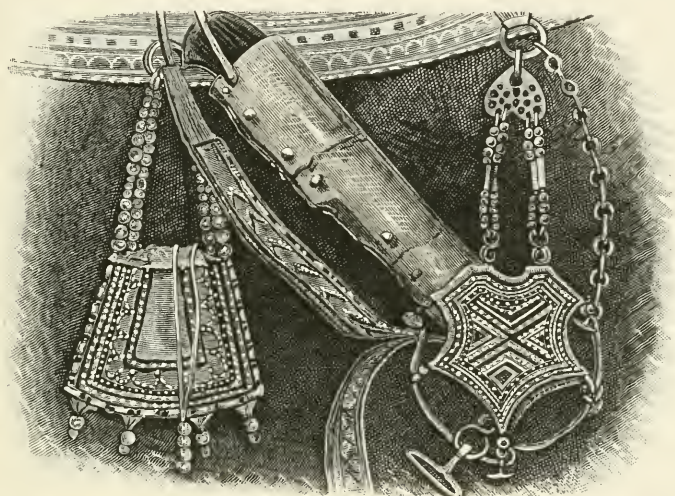
share of the expenses from London was £87, exclusive of skins, photographs, etc., purchased—an average of about $3\frac{3}{4}d.$ per mile, including everything.

The Yenesei is said to be the third largest river in the world. In Yeneseisk the inhabitants claim that the waters of their river have flowed at least two thousand miles (through Lake Baikal) to their town. Here the river must be more than a mile wide, but at the Kureika, which is about eight hundred miles distant, it is a little more than three miles wide. From the Kureika to the limit of forest growth, where the delta may be said to begin, is generally reckoned another eight hundred miles, for which distance the river will average at least four miles in width. To this we must add a couple of hundred miles of delta and another couple of hundred miles of lagoon, each of which will average twenty miles in width, if not more.

On reaching the ship we found the crew well and hearty. The men had been amply provided with lime-juice, had always some dried vegetables given them to put into their soup, and the captain had left strict orders with the mate that exercise should be taken every day, and that during the winter trees should be felled and cut into firewood ready for use on board the steamer on her voyage home. The consequence of these sanitary precautions was that no symptoms of scurvy had presented themselves. On the other hand, we afterwards learned that the crew of Sideroff's schooner, which had wintered four degrees farther north, not having been supplied by Captain Schwanenberg with these well-known preventives, had suffered so severely from scurvy that the mate alone survived the winter.

Our winter quarters were very picturesque. The *Thames* was moored close to the north shore of the

Kureika, at the entrance of a small gully, into which it was the captain's intention to take his ship as soon as the water rose high enough to admit of his doing so, and where he hoped to wait in safety the passing away of the ice. On one side of the ship was the steep bank of the river, about a hundred feet in height, covered with snow, except here and there, where it was too



DOLGAN BELT AND TRAPPINGS

perpendicular for the snow to lie. On the top of the bank was the house of a Russian peasant-merchant, with stores and farm-buildings adjacent, and a bath-house occupied by an old man who earned a living by making casks. One of the rooms in the house was occupied by the crew of the *Thames* during the winter. As we stood at the door of this house on the brow of the hill, we looked down on to the "crow's-nest" of the *Thames*. To the left the Kureika, a mile wide, stretched away some four or five miles, until a sudden bend concealed it from view, whilst to the right the

eye wandered across the snow-fields of the Yenesei, and by the help of a binocular the little village of Kureika might be discerned about four miles off on the opposite bank of the great river. The land was undulating rather than hilly, and everywhere covered with forests, the trees reaching frequently two, and in some rare instances three feet in diameter.

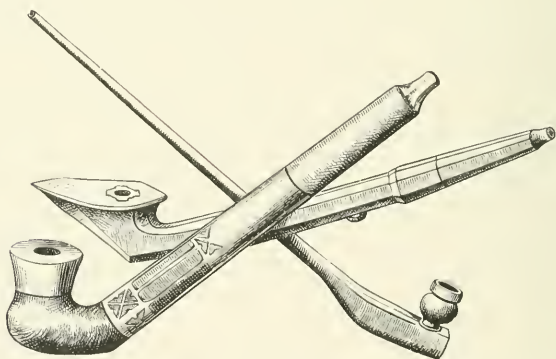
Not long after our arrival I purchased a pair of snowshoes, unpacked my gun, and had a round in the forest. The sun was hot, but the wind cold. On the river the depth of the snow was six feet, but in the forest I found it rather less. The trees were principally pine, fir, larch, and birch. I found more birds than I expected. A pair of what I took to be ravens were generally in sight, and now and then a small flock of snow-buntings flitted by. Outside the door of the sailors' room, picking amongst the refuse thrown out by the cook, were half a dozen almost tame nutcrackers hopping about. They allowed us to go within three feet of them, and sometimes they even permitted us to touch them with a stick. They seemed to be quite silent, never uttering a sound, and their feathers were so fluffy that their flight was almost as noiseless as that of an owl. I saw one or two of these birds as I entered the wood, but none afterwards. The Lapp-tit was very common and very tame. I saw one black-and-white woodpecker, but did not get a shot at him. Some willow-grouse flew over my head out of shot, and I saw many pine grosbeaks. I thought I heard a jay scream, but could not get a sight of the bird.

The following day I had a long round on snowshoes through the forest in the morning, and another nearly as long in the afternoon. The sun was burning hot, but a cold north wind was still blowing, and it was freezing hard in the shade. I then discovered that the nutcracker

was by no means the silent bird he appeared to be when close to the houses. I got amongst quite a colony of them in the forest. At one time there were eight in one tree; at another time they flew from tree to tree, screaming at each other. They have two distinct notes, both harsh enough. One, probably the call-note, is a little prolonged and slightly plaintive; the other is louder and more energetic—an alarmed or angry tone. This is probably the alarm-note, and is the one which on the previous day I mistook for the scream of a jay. It is almost as grating to the ear as the note of a corncrake. I found the pine grosbeak as common as they had been the day before, and shot males both in the red and yellow plumage. I was also fortunate enough to get a shot at one of the pair of birds which the sailors called ravens, and which they assured me had wintered at the Kureika. I was surprised to find him so small a bird, and I am now convinced that he was only a large carrion-crow. His croak was certainly that of a crow, and not that of a raven.

I continued to make excursions in the forest every day with greater or less success. After all, the forest was nearly denuded of birds. I sometimes trudged along on my snowshoes for an hour or more without seeing one. Then all at once I would come upon quite a small family of them. The few birds there were seemed to be gregarious. Pine grosbeaks and Lapp-tits were generally together, perhaps three or four of each. On the 27th I succeeded in securing the woodpecker, and found him to be, as I expected, the three-toed woodpecker. On the banks of the river small flocks of snow-buntings occasionally passed, and the nutcrackers continued as common as ever. The latter birds were remarkably sociable, three or four usually congregating together about different

parts of the ship, and apparently watching with interest the operations of our sailors, who, assisted by some Russian peasants, were busy cutting away the ice all round the vessel. The river was frozen solid to the bottom where the *Thames* was moored, and the captain was afraid that when the water rose she would remain attached to the bed and be swamped instead of rising with the water. This was no imaginary danger, for I remember a case in point which happened in the Petchora. The ship I refer to did certainly float when the water rose, but she left her keel ice-bound to the bottom of the river. The *Thames* was frozen very fast indeed. The last couple of feet was frozen mud, as solid as a rock, and the men found it hard and tedious work chipping away this icy mass with their pickaxes.



SAMOYEDE PIPE OF MAMMOTH-IVORY—OSTIAK PIPE OF WOOD INLAID WITH
LEAD—TUNGUSK PIPE OF WROUGHT IRON



REINDEER SLEDGE ON THE KUREIKA

CHAPTER XXIX.

IN WINTER QUARTERS.

The Ostiaks of the Yenesei—An Ostiak Baby—A new Bird—Visit from the Blagachina and the Postmaster—Blackcocks in the Forest—The Capercailzie—Wary Crows—Stacks of Firewood—Result of a Week's Shooting.

WHILST we were waiting patiently for summer to return I was much interested in observing the natives of these northern climes. Every day our house was visited by Ostiaks, who came with squirrel, ermine, and fox skins, to barter for meal or black bread from the Russian peasant merchant. These Ostiaks must not be confounded with the Ostiaks of the Ob. The latter are a Finnish race allied to the Voguls of the Urals, the Zyriani of the Izhma, and the Kvains of Lapland. The Ostiaks of the Yenesei, on the other hand, are allied to the Samoyedes; at least this was the opinion I formed as the result of my inquiries into their language. There were several Ostiak chooms at a short distance from our winter quarters. These chooms, or tents, were exactly like the summer tents of the Petchora Samoyedes,

covered with birch-bark ; their sledges also were of precisely the same construction as those of their North European relations. Judging from their clothes, they must have been very poor. Their reindeer were large, and looked healthy. On one occasion one of the women brought a baby, a queer little thing, with black eyes and black hair. The cradle was a wooden box about three inches deep, with rounded ends, almost the shape of the child. The bottom of the box was oval, and projected an inch beyond the box at either side, and three or four inches at each end. A quantity of sawdust lay at the bottom of the box, which was covered with a piece of flannel over the child's legs, and a hare's skin with the fur on over the body. The baby was placed in the box, having on nothing but a short cotton shirt. The flannel was carefully wrapped over its feet and lashed securely, from two places on each side, to a brass ring over its knees. The arms were placed close to the body, and wrapped up with it in the hare's skin, which was secured as before to a brass ring over the breast. Half a hoop of wood, the two ends of which were loosely fastened to the sides of the box, was raised so as to be at an angle of 45° with the bottom of the box ; it was kept in that position by lashings from the top and bottom ; when a handkerchief was thrown over this it formed a hood over the child's head. The little one cried as the complicated operation of being put to bed was performed, but as soon as it was finished the Ostiak woman sat down upon the floor, took the box upon her knee, and quieted the child by giving it the breast.

On the 28th I added a new bird to my list. I had walked an hour in the forest without seeing a feather. I then all at once dropped upon a little party of tits, in company, as usual, with some pine grosbeaks. I shot at what I

thought was the handsomest tit, and had the pleasure of picking up a nuthatch. Half an hour afterwards I came upon the same or another party. I watched each bird very closely, and soon found there was a nuthatch among them. The note was different from that of the tits, a sort of *zt*, something like the note of our tree-creeper, and an occasional *whil*, or very liquid *whit*. The two birds proved to be male and female. On the same excursion I heard a redpoll or two, the first trace of these birds I had seen since leaving Yeneseisk. I also saw a flock of snow-buntings, and shot a second three-toed woodpecker.

The same evening the Blagachina and the postmaster came to visit Captain Wiggins. They had sledged over from Turukansk. I had hoped, with the assistance of Glinski as interpreter, to get some interesting information from these gentlemen, but they seemed to have found it necessary to fortify themselves against the cold during the journey, and when the sledge arrived the Blagachina was so fast asleep that we had the greatest difficulty in waking him. He slept most of the following day, apparently waking just to eat and refresh himself with the vodka of the Russian merchant, so we saw little or nothing of our visitors, and got no information from them.

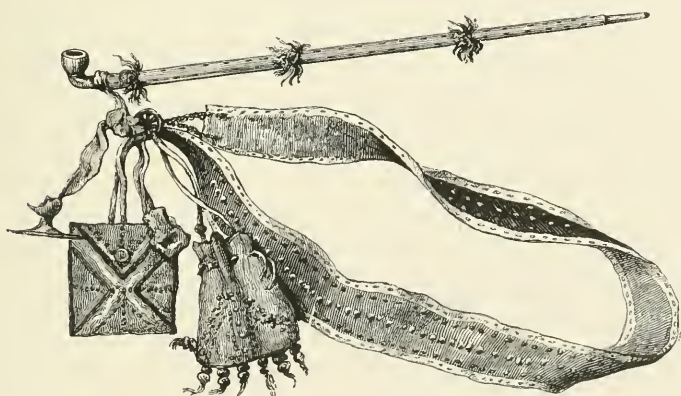
On Sunday the wind shifted from north-east to north-west, but produced no change in the weather. The sun was burning hot all day, and on any steep bank exposed to its rays it made a slight impression, but not a drop of water survived the night's frosts, and to all intents and purposes we were still in mid-winter. We used occasionally to see a cloud in the evenings, but generally the sky was brilliantly clear. As I could make nothing out of our guests, I left them to drink and sleep and turned into the forest. To my surprise, I found

quite a covey of blackcock on the top of the hill, but I was in very bad shooting order, and missed every shot until I came suddenly upon a bird sitting upon the thick branch of a pine. It fell down with a crash on the snow, and I found that I had secured a hen capercailzie. Her crop was full of the small needlelike leaves of a species of fir, allied to our Scotch fir, which the Russians call the cedar.

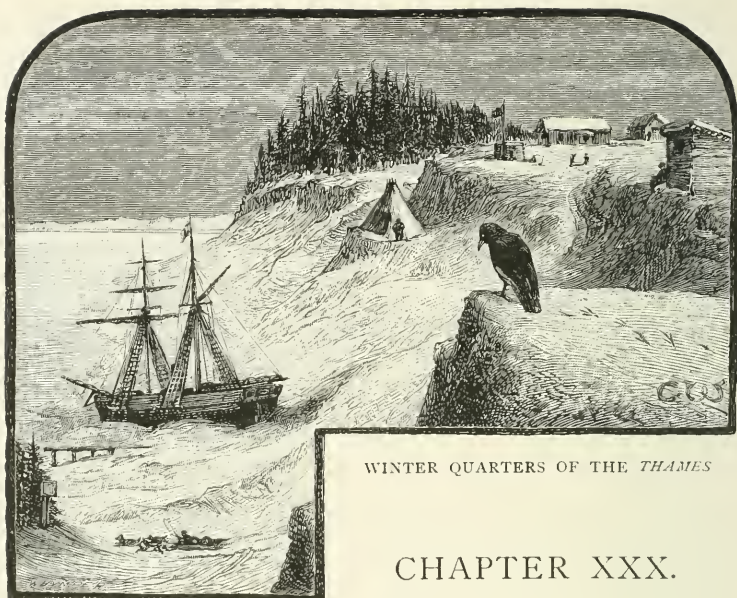
Early on the following morning our visitors left, and Captain Wiggins and I hired a sledge and drove across the Yeneśei to the village of Kureika. Before we started I noticed that a fresh pair of carrion-crows had arrived, and as soon as we reached the village we saw three or four more feeding on the green in the centre, which at that time of the year was a large manure-yard, with here and there some dirty snow visible. One of these crows seemed to be nearly, if not quite, a thoroughbred hoodie. Two of them were about half and half, and one was black with a grey ring round its neck. They evidently knew that we were strangers, and retired into the forests as soon as we arrived, but one of the Russian peasants, of whom they seem to have no fear, promised to get me some in a day or two. In the woods which were close to the village the trees were small, principally birch. All the large cedars and pines had been cut down to build the village with, and to furnish an annual supply of firewood for the steamers which during the short summer ply between Yeneseisk and Golchika. Quite a mountain of this firewood was stacked on the edge of the cliff, representing the winter's work of the villagers. There were hardly any small birds in the forest, all that I saw being a pair of Lapp-tits. Black-game was, however, abundant. In one tree I counted six blackcocks, whilst six more were in trees close by. A good rifle-shot might

have made a large bag. I got at least five shots at seventy to ninety yards, but with a 20-bore gun missed them all. The villagers were very hospitable, inviting us into their houses and offering us tea and milk. In the afternoon I had a stroll in the forest, on the other side of the Kureika. The sun was burning hot, but whenever I exposed myself to the wind it was icy cold. I bagged a pair of Lapp-tits, a brace of pine grosbeaks, and a couple of nuthatches.

We had now been a week at our winter quarters, and were hoping that the advent of May would bring us warmer weather and more birds. My tale of skins had only reached forty, and many of these were snow-buntings, which I shot merely to keep Glinski in practice. My list of birds identified within the Arctic Circle had only reached twelve, and I was beginning to be impatient of the slow progress.



TUNGUSK PIPE AND BELT



WINTER QUARTERS OF THE *THAMES*

CHAPTER XXX.

WAITING FOR SPRING.

Scarcity of Birds—Arrival of Ostiaks—Snow-spectacles—Ostiak Dress—Poverty of the Ostiaks—Schwanenberg goes in search of Graphite—Ostiak Ideas concerning the Covering of the Hair—Hazel-grouse—Difference of Tungusk and Ostiak Hair-dressing—The Weather—Superstition about shooting Crows—A Token of coming Spring—Scarcity of Glass—Double Windows—Geographical Distribution of the Samoyedes—Of the Yuraks—Of the Ostiaks—Of the Dolgans—Of the Yakuts—Of the Tungusks.

ON the 1st of May a long round in the forest, with a cool wind and a burning hot sun, did not result in much more than so many hours' practice on snowshoes. In one clump of spruce-fir I got a couple of pine grosbeaks and a pair of Lapp-tits. In another I shot a three-toed woodpecker and a nuthatch, letting the tits go by. I picked up an odd tit afterwards, saw another pine grosbeak and a few black-game, which complete the list of all the birds I saw in six hours. Every excursion I made impressed upon me two facts—the scarcity of birds and the gregariousness of the few there were.

The sun was as brilliant and warm as ever on the following day, but the wind was higher—a nor'-wester, as cold as ice. I shot a nuthatch and a woodpecker in the morning, but stayed at home in the afternoon, finding an excellent excuse in the arrival of a party of Ostiaks from a distance, whose reindeer looked very picturesque picketed on the snow round the house. From one of these poor fellows I bought a bow and some arrows, and from another a pair of snow spectacles. The latter are a great curiosity. The frame is made of reindeer-skin with the hair left on, and the spectacles are tied on behind the head with thongs of reindeer-skin without hair. The eye-pieces are roughly the shape of the eye, sewn into the skin. The poor Ostiak who had made these was apparently unable to procure metal enough of one kind to furnish both eye-pieces, so one was made of sheet-iron and the other of copper. A narrow horizontal slit leaves the eye well protected from the glare of the hot sun on the white snow, and yet allows a much wider range of vision than one would expect.

I found it very difficult to get any accurate information about the dress and habits of the various races inhabiting these parts. There are so many races, they are so mixed together, and with the Russians; and my “muddle-headed Hebrew” being such a poor interpreter, I was almost ready to despair of getting at the exact truth. So far as I was able to ascertain, the Ostiak dress is a short jacket of reindeer-skin, more or less ornamented, long reindeer-skin boots coming up to the thighs, a “gore”-shaped head-dress tied under the chin at the two points and edged with foxes’ tails, one going over the brow and the other round the neck. In winter the jacket is made of skins with the hair outside, and is lined with skins, the hair of which is next the body; while

in severe weather an overcoat is worn, made of similar material, shaped like a dressing-gown. In summer, similar dresses are worn made of reindeer-leather, stained or dyed in fanciful patterns. I am of opinion that the Ostiaks of the Yenesei are a race of Samoyedes, who migrated southwards into the forest region, and adapted the national dress to a more southerly climate, borrowing more or less the costume of the Tungusks. They seem to be very poor. Living, as they do, principally on the banks of the mighty river, fishing in the summer-time and hunting in the winter, they come far too much into contact with the Russians, who, with the aid of their accursed vodka, plunder them to almost any extent.

On the 3rd of May Captain Schwanenberg left us on a wild-goose chase up the Kureika in search of graphite. He and eight men went up the river for about a hundred versts. He chartered a party of Ostiaks, who engaged to take him, his men, and his baggage, including a pump and a sledge-load of spades, pick-axes, etc., at the rate of 30 kopeks per pood. His destination was a waterfall in a part of the river which is very narrow, and where the banks are perpendicular rocks of graphite. A quantity of this graphite had been brought down to the winter quarters of the *Thames* the previous autumn. Captain Wiggins took a sample with him to London, which was unfavourably reported upon ; so Sideroff, who has the concession for these mines, instructed Schwanenberg to dig deep into the ground and try to find graphite of a better quality. Of course the expedition turned out a disastrous failure, as will hereafter appear.

The Ostiaks seem to reverse St. Paul's recommendation to women to have the head covered. In summer the men wear no head-dress out of doors. In the house

the women wear nothing on the head, but the men tie a handkerchief round the brow, and when I asked the reason of this custom, I was told that a man must not expose his hair.

In the afternoon I had a long round on snow-shoes, but saw only half a dozen birds. Four of them were pine grosbeaks; I was chasing the fourth when I saw a large bird stretch its neck out from a well-leaved branch of a pine-tree, and immediately draw it in again. I could not see anything, but I fired at the foliage, and down tumbled a hazel-grouse. Shortly afterwards I caught a momentary glimpse of another alighting in a distant pine. I carefully stalked it, but although my snow-shoes made noise enough on the frozen crust of the snow, as soon as I doubled in full view of the tree, the bird remained standing on a conspicuous branch within easy shot. The birds turned out to be male and female, and were the first hazel-grouse I had seen. I saw a solitary nutcracker in the forest, but these were the only birds I came across during a ramble of four hours, except close to the house, where a flock of snow-buntings, half a dozen nutcrackers, and a pair of crows were constantly to be seen. In the evening I bought a coat of a Tungusk. He could not speak Russian, but he tried to make me understand that he was Tungusk and not Ostiak by showing me his hair. It was brushed back and tied in a knot at the neck like an incipient pigtail. He gave me to understand that the Ostiaks wore their hair loose and tumbling over their forehead.

On the 4th of May the weather still showed no sign of change. A burning hot sun was trying to thaw the snow. An icy cold nor'-wester was freezing it again directly. I shirked the cold morning, and got one of the sailors to take me in the dog-sledge a couple of miles up

the Kureika in the afternoon. We were about three hours in the forest. My bag was one hazel-grouse, four pine grosbeaks, three Lapp-tits and one mealy redpoll. The latter was the first of this species which I had shot since leaving Yeneseisk. In the evening the man whom I had commissioned to shoot crows for me came from his village without any. I asked him why he had neglected my orders. He told me that it was unlucky to shoot a crow, that a gun which had once shot a crow would never shoot any other bird afterwards; and he assured me that he had once shot a crow, and had been obliged to throw his gun away. So much for the intelligence of the Russian peasant!

The next morning I walked across the Yenesei to the village where the crows were, but I could not get a shot at them, they were so wary. I found the peasant had shot me a couple of striped squirrels* and a brace of black-grouse, but no crows. I had a round in the forest, but came home with an empty bag. The wind was as cold as ever, but when I got back to the ship I heard that a swan had been seen flying over it, so we began to look forward a little more hopefully to the possibilities of approaching spring.

One of the peculiarities of this part of the country is that it is a land of dear glass. You rarely see a window with square panes. In the houses of some of the poorer peasants it is not an uncommon thing to find one entirely composed of broken pieces of glass of all sizes and shapes, fitted together like a puzzle, and carefully sewn into a framework of birch bark which has been elaborately

* The striped squirrel (*Tamias asiaticus*) is common to both continents. In America it is called the chipmunk. A very near ally (*Tamias lysteri*) is also found on the latter continent, but this species has a somewhat more southerly range, being found as far south as Mexico. The former species is arctic or subarctic in its range, and has never been found so far south as the British Islands.

cut to fit each piece. Sometimes glass is dispensed with altogether, and pieces of semi-transparent fish-skin are stitched together and stretched across the window-frame. In winter double windows are absolutely necessary to prevent the inmates of the houses from being frozen to death. The outside windows project about six inches in front of the inside ones. If the inside window reveals the poverty of the inhabitants, the outside window seemingly displays his extravagance. To all appearances it is composed of one solid pane of plate-glass nearly three inches thick. On closer examination this extravagant sheet of plate-glass turns out to be a slab of ice carefully frozen into the framework with a mixture of snow and water in place of putty.

On Sunday, the 6th of May, I had a short stroll—if walking on snow-shoes can be called strolling—in the forest, but I shot nothing except a blackcock. In the afternoon I put together all the notes I had dotted down about the geographical distribution of the native tribes in these parts. Most of this information I obtained from my most intelligent friend the second priest of Turukansk, whom Captain Wiggins and his friends had nicknamed the “Thirteenth Apostle.”

The most northerly race are the Samoyedes. They extend from the Kanin peninsula in Europe to the north-east cape in Asia. They occupy a strip of land extending from the coast southwards for about three hundred miles, exceeding that distance at the gulf of the Ob and the Taz, the whole of the shores of which they frequent.

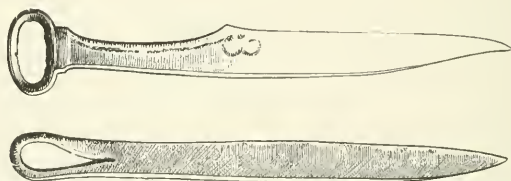
The Yuraks are a small race nearly allied to the Samoyedes. They occupy the district between the east shore of the gulf of the Taz and the Yenesei from the Arctic Circle to about 70° North latitude.

The Ostiaks are a much larger race, not so nearly allied to the Samoyedes as the Yuraks are. They are distributed immediately south of the Yuraks from the Arctic Circle to nearly as far south as the Kamin Pass.

The Dolgan territory is bounded on the north by the Samoyede land about 70° N., on the south by the Arctic Circle, on the west by the Yenesei, from which river it extends eastwards three or four hundred miles. These people belong to an entirely different race, and are very nearly allied to the Tatars.

The Yakuts occupy the district watered by the Katanga River from 70° to about 73° North latitude. They are near allies of the Dolgan and Tatar races.

The Tungusks occupy the districts on the east bank of the Yenesei drained by the two great rivers, the Nishni Tungusk and Kamina Tungusk, as far east as the watershed of the Lena. They are copper-coloured like the Dolgans and Yakuts, but their language bears no resemblance to any of the races I have mentioned.



BRONZE KNIVES FROM ANCIENT GRAVE NEAR KRASNOYARSK



OSTIAK CHOOM

CHAPTER XXXI.

THE CHANGING SEASONS.

Erection of an Ostiak Choom—Ornithological Results of the Week—An Ostiak Feast—Comparisons of Ostiaks and Tungusks—Snowy Owl—Our First Rain in the Arctic Circle—Further Signs of approaching Summer—Northern Marsh-tit—Ornithological Results of the Third Week—White-tailed Eagle—Snowstorm—A solitary Barn Swallow—A Wintry Day—A Fox—The River rises—Five Roubles for an Eagle—What became of the Roubles—Visit from our Ostiak Neighbour—A Baby Fox—Our Two Babies—A Crow's Nest—The Blue-rumped Warbler.

ON the 7th of May I recorded in my journal another sign of approaching summer, namely, the arrival of an Ostiak family, who in the course of the day erected a tent or choom on the banks of the Kureika close by the ship. The migrations of the natives in these parts are facts

in natural history almost as much guided by instinct as those of birds. The Ostiak is a hunter. In the winter he lives in the forest and hunts birds to eat, and fur-bearing animals to provide the means of obtaining meal and tobacco from the Russian peasant-merchant, and to satisfy the claims of the Russian tax-gatherer. In summer he migrates to the banks of the great river to catch fish, in which operation he is very expert. Our new neighbour seemed very poor. He had no reindeer, and arrived with a couple of dog-sledges. His dogs were a queer mongrel lot, and seemed half-famished. He soon cut down some slender birch-trees and erected his choom, exactly on the pattern of the Petchora Samoyedes. He covered it with rolls of birch-bark, carefully sewn together with reindeer-sinew into broad sheets, which wound diagonally round the choom. On the day of his arrival the wind was west, and for the first time since our arrival the sky was cloudy. I had a long round through the forest, but only shot a single bird, a three-toed woodpecker. We had then been a fortnight in our winter quarters. My second week was not a very successful one ornithologically ; I certainly added another fifty skins to my plunder, but only two new species to my list.

The 8th of May was the first day on which there was any sign of thaw in the shade. What little wind there was came from the south-west, but the air was raw and chilly. I did not go into the forest, but on the banks of the river I fired into a flock of snow-buntings, in order to find Glinski something to do, and killed six. Six more ran away wounded over the snow. They were pursued and caught by the Ostiak children, who carried them to their father, who was chopping firewood near the choom. The snow-buntings were then divided amongst the party, rapidly plucked, and greedily eaten, warm, raw, and bleeding!

Before this was accomplished the youngest child, certainly not more than five years old, having either heard or smelt what was going on, came running out of the choom with scarcely a rag of clothes on, and howled and screamed until its share of the spoil was thrown to it.

The Ostiaks are a very different-looking race from the Tungusks. They might be mistaken for a mixed breed between the Russians and Tungusks. The Ostiaks are of sallow complexion, have high cheek-bones and flattish noses, but the Tungusks are copper-coloured, have still higher cheek-bones, and sometimes scarcely any bridge at all to the nose. One also occasionally sees brown hair amongst the Ostiaks, but this may, of course, indicate the presence of Russian blood.

Although I did not turn out on my snow-shoes that day, I nevertheless added a new bird to my list. This was a handsome snowy owl, almost white. It was sent me in the flesh by Mr. Nummelin, the mate of Schwanenberg's schooner, who had left us a day or two previously to sledge down to the islands where she lay moored. In a note which accompanied it he told me that he had picked it up a few stations north of our quarters. It had been caught in a fox-trap. I found on dissecting the black-grouse and hazel-grouse that they had been feeding on the buds of the birch and alder.

On the 9th of May we had the first attempt at rain since our arrival in the Arctic Circle. The wind continued south-west and the snow began to thaw fast. The mate also saw a goose fly over the ship, and our hopes of the arrival of summer began to rise. I also watched a rough-legged buzzard majestically sailing in wide circles near us, but it took care never to come within shot. The rain continued all the following day, and became very heavy at night. A flock of six geese flew over, and we rejoiced

at the prospect of an early end to the long winter. The wind continued west during the 11th, but the rain turned to snow with intervals of sunshine. A couple of peregrine falcons arrived, to the discomfiture of the snow-buntings. In the afternoon the clouds cleared away, and we had a calm bright evening. I tried a round in the forest, but the snow was very treacherous after the rain, and I came to grief on my snow-shoes more than once. In a pine-tree not far from our quarters I found a crow's nest containing one egg.

On the following day, when I made my usual round in the forest, I found a north-west wind blowing, and although the sun frequently shone, it was very cold. Travelling was easy enough. There was a frozen crust on the snow, hard enough to bear my weight when distributed over a pair of snow-shoes. I met with only one party of birds, but that was a very interesting one. It consisted of a flock of about a dozen tits, far more than I had ever before seen together. I shot five of them. To my great surprise, two of them proved to be northern marsh-tits. I have always looked upon the tits generally as non-migratory birds, but some partial migration must have taken place in this instance. Captain Wiggins told me that when he left the Kureika in the middle of November the forest swarmed with tits. No doubt many of these birds died during the winter, which probably kills off more birds even in temperate climates than is popularly supposed. Others may have migrated southwards. I do not think it possible that I could have overlooked the marsh-tit thus far. It must either have then just arrived or is extremely rare.

A five hours' ramble on Sunday with a north-west wind, a leaden sky, and a smart frost produced nothing but a hazel-grouse and a passing glimpse of a rough-

legged buzzard. Monday, the 14th of May, brought our third week to a close, a perfect wintry day, with bright hot sun and hard frost. It had been a somewhat dreary week. I increased my number of skins by only twenty, but added five fresh species to the list.

On the 15th of May we had a smart breeze from the south-east, and it was bitterly cold. There was some sunshine in the morning, but the afternoon was cloudy, and in the evening we had snow. I walked across the Yenesei to the village and shot a crow. It was all but a thoroughbred hoodie. I bought a capercailzie and a willow-grouse from one of the peasants. The latter bird was beginning to show the summer plumage, having changed the feathers of the upper part of the neck. Another bird which I added to my list was the white-tailed eagle. It was perched on a pine on the banks of the great river. I tried to stalk it, but snow-shoes are too noisy on a frozen crust of snow for the keen ears of an eagle, and I failed. Finding that the peasant was still resolved not to ruin his own gun by shooting unlucky birds with it, I arranged with him to drive me over to the ship in the evening, and to lend him my muzzle-loader in order that with it he might shoot me some crows. On my return to the ship I saw a couple of peregrines and a large owl, and heard that four geese had been seen flying over.

During the night a considerable quantity of snow fell, and next morning the wind was south-west with sleet. In the afternoon we had an occasional gleam of sunshine, and in the evening the wind fell, but the sky was cloudy. The snow was very soft, but it thawed slowly. We had, nevertheless, many indications of summer. I saw at least a dozen flocks of geese, each containing from six to twenty birds. The first harbinger of mosquitoes also

arrived—the first insect-eating bird, a most characteristic one, no less a novelty to us than a barn-swallow. Poor little bird! he must have got strangely wrong in his almanack and curiously out of his latitude. He was the only one of his kind which I saw within five hundred miles of the Arctic Circle, and at the time of his arrival I don't think there was a solitary insect upon the wing, whatever there might have been in sheltered nooks and crannies. I dropped him on the snow as he was industriously hawking in a gleam of sunshine—a much quicker and less painful death than dying of starvation.

Sancho Panza was very right when he said that one swallow does not make a summer. I never saw more complete winter weather than we had on the day following the appearance of our adventurous little pioneer. A cold wind blew from the north, howling round the peasant's house and in the rigging of the ship, driving the snow into the cook's passage and into the cabin. All day long fine dry snow fell, drifting into every hollow, completely shutting the great river out of view and casting a thick haze over the nearest objects. I do not think I ever saw a more miserable day. To add to my discomfort I had a heavy cold in my head, the first attack of the kind since leaving England. I expected to have had an absolutely blank day, but late in the evening the weather cleared up with a hard frost, and the peasant across the Yenesei drove up with five crows which he had shot with the muzzle-loader I had lent him. Two of these crows were thoroughbred carrions, and the other three cross-breeds between that bird and the hoodie.

The next day my cold continued very heavy, and I did not take my gun out at all: the north wind was still blowing a gale, but there was not a cloud in the sky, and it was freezing hard in the shade. In the afternoon I

saw a fox crossing the Kureika not far from the ship. The dogs caught sight of it and gave chase, but they had only recently returned from a journey and were tired, and the fox reached the forest without their gaining upon him. The following day was another dismal one. The wind shifted south, south-east, and south-west, and snow and sleet fell continually.

On Sunday we again had sunshine, with a north and north-west wind, and frost in the shade. Another sign of approaching summer became now observable. The river must have risen considerably in consequence of the melting of the snow down south. The channel round the ship, which the sailors had cut out of the ice, filled with water, and we came upon water after digging down into the snow a couple of feet. There was no open water visible, but in the centre of the river we could see large discoloured patches, as if the snow was saturated with water. Ornithologically the day did not prove blank, for I was able to complete the identification of one of my previous week's new birds. After seeing the eagle on the other side of the river, I had offered five roubles to the peasants if they would shoot or trap it for me. At the next village, twenty versts down the river, a white-tailed eagle was trapped, and a joint expedition from the two villages came over to the ship in a couple of reindeer-sledges to bring me the bird and claim the promised reward. This I gladly paid them, as I was in hope that I might in this or some other way obtain a specimen of Pallas's sea-eagle. On receipt of the five roubles the whole party turned into the Russian merchant's store near the ship. The end of it was that during the night the five roubles filtered out of the pockets of my elated friends, and in the morning they were all penniless and dead drunk. To add to their misfortunes, the reindeer

had broken loose from their moorings in the snow, and had wandered off up the Kureika in search of food. When the peasants came to their senses during the following afternoon they started off on snow-shoes to follow the tracks, but whether they ever recovered the animals or not I never heard. No wonder that a land like Siberia, full of wealth of all sorts, remains poor for want of labour to realise its resources.

In the evening the Ostiak from the choom came with his son down into the cabin, apparently to pay us a visit. They sat down stolidly and partook of some tea which we happened to have on the table. We were wondering what could be the object of their visit, whether it might not be one of ceremony to show a neighbourly feeling, when the boy pulled out from under his fur coat a squirrel and a hazel-grouse, which his father had shot during the day. After we had examined these for some time, the old man in his turn pulled out from his sleeve a live fox, a few days old. It was sooty black, with a white tip at the end of its tail. It was still blind, but we hoped it might turn out to be a veritable black fox, so we decided to buy it and try and bring it up by hand. We rigged up an excellent bottle with the tube of my pocket-filter and part of a kid-glove. We got Glinski to tell the Ostiak to search for and find the hole where he got the young fox and to lie in wait for the mother. This he did, and on the next day he came again in triumph, bringing the mother and five more young ones, exactly like the one we had. The mother was red enough, but we bought another young one to keep our other baby company. It was only by dint of great perseverance that we succeeded in bringing these two babies up with the bottle, but as soon as they began to feed themselves they grew fast. They were very quarrelsome in their

play, and often would spit at each other like cats. They grew up tame and timid, but the red hairs developed themselves in due time, and our hope of being able to rear a couple of black foxes soon faded.

On the 21st of May I climbed up to the crow's nest which I discovered on the 11th, and found that it contained five eggs. I had a good view of the parent birds, and ascertained that they were hybrids between the carrion-crow and the hoodie. The wind was south-west, but there was no sunshine and it froze hard. Farther south, however, the thaw must have been going on apace. The river kept steadily rising. When the water first broke in upon the sailors, who were cutting away the ice from under the *Thames*, it rose to four feet on the ship's bow. On the 21st it stood at eight feet. I had a short round in the forest in the afternoon, and scarcely saw a bird. One was, however, new to me. At first I thought it was a tit. It was flitting about from tree to tree, apparently seeking insects on the trunks below the level of the surface snow, in the hollows round the stems caused by the heat of the sun absorbed by their dark surfaces. It



OSTIAK COSTUME

gave me a long chase, flying rapidly, but never rising higher than three or four feet above the ground. At last I got a long shot at it. It was alive when I secured it, and I remarked its large and brilliant pale blood-red eye. It was the blue-rumped warbler (*Tarsiger cyanurus*), and made the third new species added to my list during the fourth week of our residence within the Arctic Circle. My booty was also increased by some forty skins.



BRONZE BIT FROM ANCIENT GRAVE NEAR KRASNOYARSK



DRIVING WITH THE ICE ON THE
KUREIKA

CHAPTER XXXII.

THE BREAK-UP OF THE ICE.

Weary Waiting for Summer—Ravens—More Ostiak Neighbours—The Ship breaks her Bands of Ice—A Hen-harrier—Appearance of the Rising River—Premature Migration of Geese—My Week's Work—Old Story of Thaw in the Sun and Frost in the Shade—Last Day of May—Revolutions in the Ice—A Range of Ice Mountains—Signs of Summer—Arrival of the Common Gull and of the White Wagtail—Ice Breaking up—An Unprepared-for Contingency—Dangerous Position—Driving along with the Ice—Loss of the Ship's Rudder—Preparations to Abandon the Ship—Babel of Birds—We Desert the Ship—On Board Again—The *Thames* Steered into the Creek—Enormous Pressure of the Ice—The Battle of the Yenesei—"Calving" of Icebergs—The Final March Past.

THE fifth week of weary watching and waiting for a summer, which some of the sailors began to think would never come, commenced with a cloudy sky and an occasional attempt at a snowstorm, the wind chopping about from south-east to south-west. Many geese flew over during the day and hawks were more frequently seen than

before—so far as I could identify them, peregrine falcons and rough-legged buzzards. Late in the evening a large brown owl, probably the Ural owl, sailed up and down the banks of the Kureika, but it never came within shot.

On the morning of the following day the wind was west, but before evening it turned round to the north, accompanied with hard frost in the shade. My attention was called to a pair of ravens, who seemed to have excited the jealousy of the crows who had their nest close by. The efforts of the latter birds to drive away the new-comers were untiring. I shot the female raven, which was a fresh bird for my list. I also picked up a dead short-tailed field-mouse, nearly as large as a rat. The migration of geese continued all day, and a further migration of Ostiaks took place. Before night we had three Ostiak chooms near the ship.

On the 24th of May a great source of anxiety was removed from our minds. When we turned into our berths the previous night the water at the ship's bow stood at eleven feet. At four o'clock in the morning we were suddenly awoke by a convulsion like an earthquake. We started from our berths, and found that the ship had burst through the bands of ice, risen to her level, and righted herself. Her bow showed eight feet only, so she must have risen three feet. There was, however, no change at the stern, which probably remained aground.

A long round in the forest proved almost a blank; my bag being but one solitary bird, a willow-grouse, with traces of summer plumage on the head and neck. The sun was warm, but the wind was north, and to all intents and purposes it was still mid-winter. The succession of partial thaws and frosts had made the crust of the snow so hard that we could walk anywhere without snow-shoes. My afternoon's ramble again produced only one bird, but

as this was a new one, a fine male hen-harrier, I looked upon the day's work as a success. The harrier had the remains of a snow-bunting in its stomach.

The next day was very cold, with a north-west wind and brilliant sunshine. The river had risen so much that the ship floated both fore and aft. We could perceive that the ice in the centre of the river was gradually losing its heavy burden of snow, the water in many places having risen to the level of its surface, causing large greyish patches, and making the snow look more or less piebald. As the river rose it gradually widened. Outside the central snow-covered ice a narrow belt of ever-widening thin black ice was a feature in the landscape. The migration of geese was stopped by the cold. It had evidently been premature. Many flocks passed over during the day, but they were all flying south, having overshot their mark and flown faster than the rate at which the ice was breaking up, into a region still frost-bound, where, consequently, no food could be obtained. Hawks became abundant, a sure sign that their prey were not far off and would very soon become so also. I shot another male hen-harrier, and missed a shot at the female. I also saw a pair of sparrow-hawks and a rough-legged buzzard, and in the evening one of the engineers shot a male peregrine falcon. The female was sitting on the same tree at the time.

There was no change during the next three days. On the 26th I shot a bean-geese, which was apparently the species of which all the flocks we had hitherto seen were composed. I found an excellent place on the bank of the main river, where I could lie concealed like a grouse-shooter behind his butts. The geese came up at a terrific pace in parties of five or six, exactly like grouse in a drive. They were scarcely in sight before they

whizzed over my head, and out of shot again before I had time to turn round. I wasted at least a dozen cartridges before I secured a bird, which fell to the ground with a tremendous crash. I saw another male hen-harrier and another rough-legged buzzard, and a small hawk, which I have little doubt was a merlin. On the 28th, besides the flocks of geese, flocks of swans constantly passed over, and I added to my collection a raven and a female hen-harrier. At night, as we went to bed, the thermometer stood at 25° on deck. My week's work was about forty birds skinned and three new species identified. We were all weary of winter. The peasants told us that they never remembered so late a season.

On Tuesday, the 29th of May, we commenced our sixth week in the Arctic Circle, and a very eventful one it proved. The little wind there was was southerly, and the sun was hot, but still there was scarcely any perceptible thaw, and the river rose but very slowly. I did not see a single hawk all day. At noon the snow-buntings were perched together in a birch-tree, and in the evening they disappeared. I had two long rounds in the forest—not a bird visible. I heard a mealy-redpoll, but failed to catch sight of it. We seemed to be reduced to the pair of hybrid crows nesting near, and the nutcrackers, which I did not shoot because I wanted their eggs. At that time they did not appear to have the least idea of building. Their tameness was quite absurd; there was generally a pair in the rigging of the ship. About four were usually to be found close to the house, and I occasionally came upon a pair or two in the forest. A few flocks of geese and swans passed over during the day, now flying northwards.

On the following day it was the old story again—a clear sky and thaw in the sunshine, with a cold north

wind and hard frost in the shade. The river rose three or four inches during the day, but it froze as fast as it rose. Several flocks of geese passed over, evidently yesterday's rash birds who had turned back and were now all going south. Half a dozen snow-buntings put in an appearance, and the hen-harrier was twice seen.

The last day of May was warm, with a gentle breeze from the north-west. I had a very long round in the forest, and saw a few Lapp-tits and a nuthatch. During the day many swans and geese flew over, all going northwards again. I saw a hen-harrier and a sparrow-hawk, but no snow-buntings. I shot a hazel-grouse, and saw a couple of Siberian herring-gulls steadily migrating down the Yenesei.

On the 1st of June a revolution took place in the ice. There had been scarcely any frost during the night. The wind was south, not very warm, but the sun was unusually hot. As we turned out of the cabin after breakfast we were just in time to see a small range of mountains suddenly form at the lower angle of juncture between the Kureika and the Yenesei. The river had risen considerably during the night, and the newly-formed strip of thin ice on each side of the centre ice was broader than it had ever been. The pressure of the current underneath caused a large field of ice, about a mile long, and a third of a mile wide, to break away. About half the mass found a passage down the strip of newly-formed thin ice, leaving open water behind it; the other half rushed headlong on to the steep banks of the river, and, driven on irresistibly by the enormous pressure from behind, it piled itself up into a little range of mountains, fifty or sixty feet high, and picturesque in the extreme. Huge blocks of ice, six feet thick and twenty feet long, in many places stood up perpendicularly.

Others were crushed up into fragments like broken glass. The real ice on the river did not appear to have been more than three feet thick, clear as glass and blue as an Italian sky. Upon the top of this was about four feet of white ice. This was as hard as a rock, and had no doubt been caused by the flooding of the snow when the water rose, and its subsequent freezing. On the top of the white ice was about eighteen inches of clear snow, which had evidently never been flooded. Everything remained *in statu quo* during the rest of the day. The river was certainly rising, but slowly. Captain Wiggins anticipated no sudden change, and laughed at some of his sailors who, alarmed at the apparition of the ice mountains, began to remove their valuables out of the ship. I did not make any long excursion, but kept near our quarters. I got a flying shot at the sparrow-hawk, and dropped him upon the snow. That we were on the eve of summer was everywhere apparent. Great numbers of geese and large flocks of swans were continually passing northwards. I had strolled out on the edge of the river bank without my snow-shoes, when just at the moment that I stepped upon a treacherous bank, and was struggling up to the breast in snow, a flock of geese passed right over my head. I had my gun in my hand, but was perfectly helpless. These geese were smaller than the one I had shot, and showed black on the belly. They were, no doubt, the lesser white-fronted goose (*Anser erythropus*). An arrival of gulls also took place. Besides the large dark-mantled species which I had seen the day before, a smaller pale-mantled species arrived, which I afterwards identified as the common gull. Another bird, which heralded the speedy presence of mosquitoes, was the white wagtail. A small party of these charming birds arrived, one of them not having

quite attained its full breeding plumage. There were still many white feathers on the throat. These birds belonged to the Indian form of the white wagtail. I also saw a very handsome male brambling, but did not get a shot at him.

We turned into our berths at half-past nine, having first instituted an anchor watch, in case any further movement of the ice should take place. We had but just fallen asleep when we were suddenly roused by the report that the river was rising rapidly and the ice beginning to break up. We immediately dressed and went on deck. The position of affairs was at once obvious. The melting of the snow down south was evidently going on rapidly, and the river was rising at such speed that it was beginning to flow up all its northern tributaries. This was a contingency for which we were utterly unprepared. We were anchored opposite the entrance to a little creek, into which it was the captain's intention to take his ship when the water rose sufficiently high to admit of his doing so. In this little creek he hoped to wait in safety the passing away of the ice. In a moment his plans were utterly frustrated. The entrance to the creek was perfectly high and dry. A strong current was setting up the Kureika. Small floes were detaching themselves from the main mass and were running up the open water. In a short time the whole body of the Kureika ice broke up and began to move up-stream. As far as the Yenesei the tributary stream was soon a mass of pack-ice and floes marching up the river at the rate of three miles an hour. Some of these struck the ship some very ugly blows on the stern, doing considerable damage to the rudder, but open water was beyond, and we were soon out of the press of ice with, we hoped, no irretrievable damage.

All this time we had been getting up steam as fast as possible, so as to be ready for any emergency. On the opposite side of the river we could see a haven of perfect safety, a long creek already full of water, and having the additional advantage of not being on the scour side of the river. When we had got sufficient steam to turn the engine we found, to our dismay, that the ice which had already passed us had squeezed us towards the shore, and that there must have been a subsequent fall in the water, for we were at least two feet aground at the stern, and immovable as a rock. The current was still running up the river, and against it there was no chance of swinging the ship round. A mile astern of us was the edge of the Yenesei ice. There was nothing to be done but to wait. In a short time the river began to rise again rapidly, and with it our hopes that we might float and steam into safety, when suddenly we discovered, to our terror, that the ice on the Yenesei was breaking up, and that a dread phalanx of ice-floes and pack-ice was coming down upon us at quick march. On it came, smashed the rudder, ground against the stern of the ship, sometimes squeezing her against the shore so that she pitched and rolled as if she were in a heavy sea, and sometimes surrounding her with small floes which seemed to try and lift her bodily out of the water. Once or twice an ice-floe began to climb up the ship's side like a snake. Some of the sailors got overboard and scrambled over the pack-ice to the shore. Others threw their goods and chattels to their comrades ashore. At length an immense ice-flow of irresistible weight struck the ship. There was no alternative but to slip the anchor and allow her to drive with the ice. Away we went up the Kureika, the ice rolling and tumbling and squeezing alongside of us, huge lumps

climbing one upon the top of another. We were carried along in this way for about a mile, until we were finally jammed into a slight bay, wedged between blocks of pack-ice. Soon afterwards the river fell some five or six feet, the stream slackened, the ice stood still, and the ship and the pack-ice were aground.

The ship went through the terrible ordeal bravely. So far she had made no water, and there was no evidence of any injury except to the rudder. This had been broken to pieces, and all trace of it carried away—a loss which it would take some weeks to repair. How could any one have committed the inconceivable blunder of fitting out an Arctic yacht with every precaution against ice, and leaving it with a complicated rudder, exceedingly difficult to replace, and without provision for its being unshipped?

The question now demanding immediate consideration was—what would take place when the ice began to move again? It seemed most probable that the ship would either be stranded on some sandbank or carried down with the ice to the sea. The captain decided that it was wisest to get as many valuables out of her as possible, and to make preparations for abandoning her if the worst came to the worst. The sailors accordingly occupied themselves in getting the cargo ashore over the lumps of stranded pack-ice and ice-floes.

The pitch of excitement at which we were naturally kept by the alarming character of the events in which we were forced to take such an active part, was by no means allayed by the weather. The brilliantly clear skies to which we had become accustomed had changed to stormy clouds, followed by drizzling rain and mist. All nature seemed to share in our excitement. The revolution in the ice took place to the accompaniment

of a perfect babel of birds. Above our heads we continually heard the *gag, gag*, of geese and the harsh bark of swans, as flock after flock hurried past us to the tundra. Wherever there was a little open water between the ice-floes and pack-ice, crowds of gulls were fishing as if they had not had a meal for a week, and their derisive laugh, as they quarrelled over their prey, seemed to mock our misfortunes, while ever and anon the wild weird cries of the black-throated and red-throated divers, like the distant scream of tortured children, came from the creek opposite. A few flocks of wild ducks also passed us, and along the shore small birds flitted from bush to bush in hitherto unknown profusion. Bramblings and white wagtails passed in pairs, shore larks in small flocks, and redpolls in large flocks, and I shot a solitary wheatear. In the midst of his troubles on board his half-wrecked steamer, Captain Wiggins seized his gun and shot a goose, which was flying over the ship, and which proved to be the little white-fronted goose, doubtless the species which I had missed shooting the day before.

The ice remained quiet until about midnight, when an enormous pressure from above came on somewhat suddenly. It had apparently broken up the great field of ice to the north of the Kureika, but not to an extent sufficient to relieve the whole of the pressure. The water in the Kureika once more rose rapidly. The immense field of pack-ice began to move up-stream at the rate of five or six knots an hour. The *Thames* was soon afloat again, and driven with the ice up the river, she was knocked and bumped along the rocky shore, and her stern-post twisted to such an extent that she began to make water rapidly. At 9 o'clock on Sunday, the 3rd of June, all hands left her, and stood watching on the

steep bank. The stream rose and fell during the day, the current sometimes stopping, sometimes becoming very rapid, the unfortunate ship being occasionally afloat, but generally aground. At night the stern-post seemed to have come back to its place, the undaunted captain, with part of his faint-hearted crew, went on board, and the pumps reduced the water in the hold. The chances were ten to one that she was a hopeless wreck, but still the sailors struggled on to the last. The marvel was, where all the ice that had gone up the Kureika could possibly be stowed. I calculated that at least 50,000 acres of ice had passed the ship.

Late on the night of Monday, the 4th of June, the ice on the Kureika almost entirely cleared away. Steam was got up, and by the help of ropes ashore the *Thames* was steered into the little creek below the house, where it had been the original intention of the captain to have waited in safety the passing away of the ice. The season had been so severe that the snow, which ought to have melted and swollen the river before the breaking-up of the ice, still remained upon the land. The consequence was that, when the great revolution commenced, the entrance to the creek was high and dry. The *Thames* entered the creek at two o'clock in the morning; by noon the water had sunk five or six feet, and the vessel lay on her side, with her bow at least three feet aground. These sudden falls in the level of the water were, no doubt, caused by the breaking-up of the ice lower down the river, which dammed it up until the accumulated pressure from behind became irresistible. Some idea of what this pressure must have been may be realised by the fact that a part of the river a thousand miles long, beginning with a width of two miles, and ending with a width of six miles, covered over with three feet of ice,

upon which was lying six feet of snow, was broken up at the rate of a hundred miles a day. Many obstacles could cause a temporary stoppage in the break-up of the ice—a sudden bend in the river, a group of islands, or a narrower place where the ice might jam. But the pressure from behind was an ever-increasing one. Although the river frequently fell for a few hours, it was constantly rising on the whole, and in ten days the rise where we were stationed was seventy feet. Such a display of irresistible power dwarfs Niagara into comparative insignificance. On several occasions we stood on the banks of the river for hours, transfixed with astonishment, staring aghast at icebergs, twenty to thirty feet high, driven down the river at a speed of from ten to twenty miles an hour.

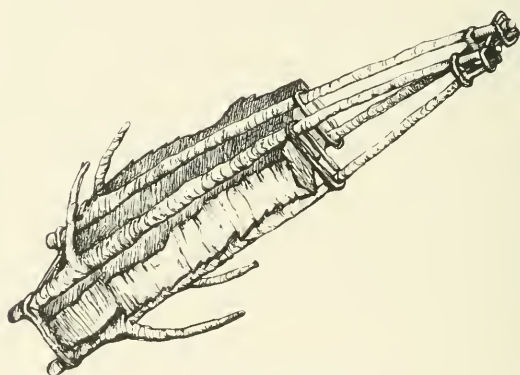
The battle of the Yenesei raged for about a fortnight, during which the Kureika alternately rose and fell. Thousands of acres of ice were marched up-stream for some hours, then the tide turned and they were marched back again. This great annual battle between summer and winter is the chief event of the year in these regions, like the rising of the Nile in Egypt. Summer, in league with the sun, fights winter and the north wind, and is hopelessly beaten until she forms an alliance with the south wind, before whose blast the forces of winter vanish into thin water and retreat to the Pole. It was a wonderful sight to watch these armies alternately advancing and retreating. Sometimes the pack-ice and floes were jammed so tightly together that it looked as if one might scramble over them to the opposite shore. At other times there was much open water, and the icebergs “calved” as they went along, with a commotion and splashing that might be heard half a mile off. No doubt it is the grounding of the icebergs which causes this operation to take place. These icebergs are formed of

layers of ice, piled one on top of the other, and imperfectly frozen together. In passing along, the bottom layer grounds, but the velocity at which the enormous mass is going will not allow it to stop. It passes on, leaving part of the bottom layer behind. The moment it has passed, the piece left behind rises to the surface like a whale coming up to breathe. Some of the "calves" must have come up from a considerable depth. They rose out of the water with a huge splash, and rocked about for some time, before they settled down to their floating level.

At last, after their fourteen days' battle, the final march-past of the beaten winter forces took place, and for seven days more the ragtag-and-bobtail of the great Arctic army came straggling down the Kureika—worn and weather-beaten little icebergs, dirty ice-floes that looked like floating mud-banks, and straggling pack-ice in the last stages of consumption. Winter was finally vanquished for the year, and the fragments of his beaten army were compelled to retreat to the triumphant music of thousands of song-birds, and amidst the waving of green leaves and the illumination of gay flowers of every hue.

This sudden change in the short space of a fortnight from midwinter to midsummer can scarcely, even by courtesy, be called spring. It is a revolution of nature, and on a scale so imposing that the most prosaic of observers cannot witness it without feeling its sublimity. Looked at in a purely scientific point of view, the lesson it impresses upon the mind is exactly the opposite of that intended to be conveyed by the old fable of the traveller whose cloak the wind and the sun alternately try to steal from him. In these Arctic regions the sun seems to be almost powerless. The white snow seems

to be an invulnerable shield, against which the sun-darts glance harmless, reflected back into the air. On the contrary, the south wind seems all-powerful. In spite of mist and cloud, the snow melts before it like butter upon hot toast, and winter tumbles down like a pack of cards.



OSTIAK ANCHOR



GULLS AMONG THE ICEBERGS

CHAPTER XXXIII.

THE MARCH-PAST OF THE MIGRANTS.

Arrival of Migratory Birds—Wagtails—The *Thames* Afloat once more—More Birds Arrive—An Ostiak Funeral—Birds Arrive Fast—The Tungusk Ice Coming Down—New Birds—Pintail Snipe—Mosquitoes on the Wing.

As soon as I was able to resume my shooting, I found that there had been a general arrival of migratory birds. It was very difficult to get about in the melting snow, but in the willows on the steep bank of the river little birds were feeding industriously, picking up insects on the naked branches, and sometimes making little flights in the air to catch a gnat upon the wing. Presently I heard a plaintive *weest*, which reminded me of Heligoland, and on shooting the bird I picked up a yellow-

browed willow-warbler (*Phylloscopus superciliosus*, Gm.), as I expected. There was quite a little party of these diminutive creatures, and they were so tame after their long journey that I watched them for a long time hopping from twig to twig, diligently searching for food. I was often within four feet of one of them, and could distinctly see its white eye-stripe and the two pale bars across its wing.

My attention was called away from these charming little warblers by hearing a still more plaintive call-note, which proceeded from a very nearly allied species almost as small—the Siberian chiffchaff. During the day I repeatedly heard the song—if song it may be called—of this little black-legged willow-warbler, which I had learned to recognise in a moment by hearing it so often in the valley of the Petchora. I soon put its identity beyond question by shooting a fine male, and discovered that it had arrived in considerable numbers, as its note was often heard during the day, but generally from some pine-tree which was for the moment inaccessible, being surrounded by snow too soft to bear my weight, even on snow-shoes, and too deep to struggle through with any chance of a successful pursuit. But interesting as the arrival of these two rare warblers was to me, having made this group my special study, I was even more delighted to hear the unmistakable song of our common European willow-warbler, a bird I had never dreamt of meeting so far east. I shot a pair, and thus satisfactorily demonstrated that some of our ornithological books have been wrong in giving the Ural range as the eastern limit of this well-known species during the breeding season. It seems too bad to shoot these charming little birds, but as the "Old Bushman" says, what is *hit* is *history*, and what is *missed* is *mystery*. My object was to study natural history, and one of the charms of the pursuit is to

correct other ornithologists' blunders and to clear up the mysteries that they have left unsolved.

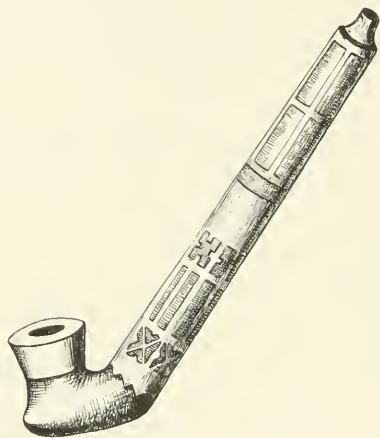
The next birds that claimed my attention were some small parties of thrushes, which were very wild, keeping mostly to the forest, where I could not pursue them, but at last I secured one as he was feeding on the steep bank of the river where the snow had melted, and had the pleasure of picking up a dusky ouzel (*Merula fuscata*), a bird which I had never seen in the flesh before. The call-note of these birds reminded me somewhat of that of the redwing.

Wagtails rapidly became very numerous, and were to be seen running about close to the edge of the water, sometimes perched on a little ice-floe, and coming inland to the pools formed by the melting snow. They were mostly the Indian form of the white wagtail, but I shot a fine male yellow-headed wagtail, a bird whose acquaintance I had first made on the banks of the Petchora. Ducks were flying up the river at intervals, but none came near enough for me to identify the species. I shot a solitary Lapland bunting, a bird for which I had been on the look-out for some time, as in the valley of the Petchora it had been amongst the earliest arrivals. The season was, no doubt, late, and this species breeds on the tundra beyond the limit of forest growth, where winter still reigned supreme.

We had brilliant sunshine on the following day, the 5th of June, without a breath of wind. The snow was thawing very fast. Ice came down the river slowly, but the current was still up the Kureika. The water rose considerably during the afternoon, and the *Thames* was again afloat. The captain was busy putting ballast into the fore part of the ship, so as to raise the stern as much as possible out of the water. When this was done she

was moored so that the stern might ground as soon as the next fall of the water took place, that we might be able to form some idea of the extent of injury she had sustained. She was making about two inches of water an hour.

Birds continued to be very abundant for some days. Flocks of Arctic wagtails arrived. I shot three males,



OSTIAK PIPE

one of them showing rudiments of an eye-stripe. The blue-throated warbler also arrived. I shot four, two males and two females. I also shot a brambling and another little white-fronted goose. Meanwhile, all day, the cuckoo was vigorously announcing that he too had reached these regions. I shot a great snipe, and Captain Wiggins got another. I also got a plover, which

turned out to be a species which I had never seen in the flesh before—the Asiatic golden plover.

In the evening there was an Ostiak funeral. The wife of one of the men living in a choom near the ship died. The funeral party consisted of half a dozen Ostiaks. Early in the morning they crossed the creek, where the ship was lying, in a boat, and then mounted the hill to the top of the bank. First came the Ostiaks, carrying the corpse slung on a pole. Then followed men with axe, pick, and spade, then women with materials for baking bread and making tea, and finally came the empty coffin. It took nearly all day to dig the grave out of the

frozen ground. A fire was made, bread was baked, tea drunk, and we were told the tea-cups were buried. Finally a small birch-tree was felled, and a rough cross, with the Russian oblique footboard, was made and placed at the foot of the grave.

In the evening there was hardly any ice left in the river, and the surface was as smooth as glass, so we took the boat and rowed across to the creek on the other side of the Kureika. The captain and I each shot a Siberian herring-gull. I also shot a brace of teal.

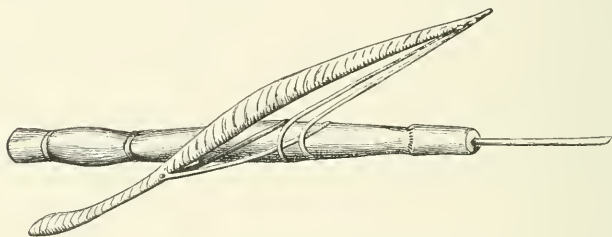
Another lovely morning broke upon us, with scarcely a breath of wind. Birds were coming faster than I could keep pace with. In my journal of the 6th of June I find recorded that in a quarter of an hour I shot a couple of Indian pintail snipe, a red-throated pipit, and an Arctic wagtail. I also identified some pintail ducks, some wood sandpipers, and Temminck's stints. I repeatedly heard the loud wild *mēē-yoo* of the wigeon, but did not see the bird.

I had a fine view of a male smew. Wagtails were extremely abundant, principally the white wagtail. There were many Arctic wagtails, and I shot one grey wagtail (*Motacilla melanope*). I shot one red-throated pipit in winter plumage and a couple of female scarlet bullfinches.

The forest was utterly impenetrable. In most places the snow was too soft for snow-shoes, but I could hear a multitude of thrushes and willow-warblers singing. Now and then a few late geese and swans passed over, and ducks of various species were constantly on the wing. I saw a couple of terns, most likely Arctic terns.

The tide in the Kureika had apparently turned. All day long the ice came slowly drifting back, and both rivers were once more full of pack-ice.

The next day was again lovely and smiling, with scarcely a breath of wind, but the snow thawed more slowly than we wished, for it froze every night for an hour or two. Four-and-twenty hours of warm south wind would have made a wonderful difference. The river had risen again, and during the night and the following day pack-ice and floes floated up the Kureika. This we were told was the Tungusk ice coming down. All this time the great migration of birds was going on. My list for that day was forty birds shot, and thirty-two



OSTIAK DRILL

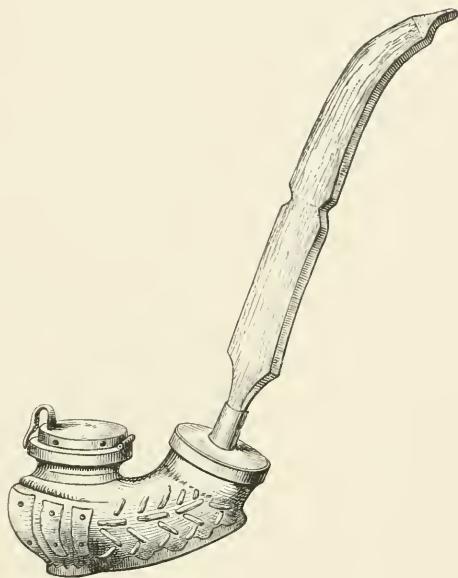
skinned. The most interesting were the golden plover, wood sandpiper, Temminck's stint, little bunting, a couple of male scarlet bullfinches, and a couple of dark ouzels (*Turdus obscurus*). The latter was a new species to me in the flesh, for I had hitherto only known it from skins.

The following day was again brilliantly fine. The wind, if the gentlest zephyr may be called wind, changed continually, east, south, and west. The stream of ice went on uninterruptedly, but this time it was down the Kureika. Birds were not quite so numerous, nevertheless I added four to my list. The first was a fieldfare down by the river-side, then I secured a terek-sandpiper on the flooded grass behind the store. In the afternoon a flock of half a dozen ringed plover arrived, and I shot

a brace of them. The last was a lesser whitethroat (*Sylvia affinis*) in the trees at the top of the banks of the Kureika. In the forest birds were abundant enough. A woodpecker made the woods ring again with its loud tapping. Willow-warblers and bluethroats were the principal songsters. I heard the Siberian chiffchaff repeatedly, and shot a yellow-browed warbler while it was uttering its note most vociferously. I also saw several scarlet bullfinches.

On the grass around the house, shore-larks and Lapland buntings congregated in a large flock. Both species occasionally run and occasionally hop, but I think the shore-larks hop oftener. I noticed also that the Lapland buntings when disturbed generally sought

refuge in a tree. Another very common bird was the pintail snipe. I could have shot a score a day had I possessed cartridges to spare. They came wheeling round, uttering a loud and rather shrill cry—*pēezh*, then dropped down with a great whirr of wing and with tail outspread, an occupation which seemed so engrossing that they did not discover until upon the ground that they had alighted within twenty yards of a man with a gun. By this time many mosquitoes were on the wing, but as yet their bite was not very virulent.



RUSSIAN PIPE

Late in the evening clouds began to gather, and rain came on which continued all night. The river soon began to rise, and the tide of ice turned again up the Kureika, proving that the mouth of the Yenesei was still blocked.



OLD RUSSIAN SILVER CROSS



DOLGAN HUNTER WITH OSTIAK BOW AND DRUM OF SAMOYEDE SHAMAN

CHAPTER XXXIV.

A BUSY WEEK ON THE KUREIKA.

Four Species added to my List—Dotterel—Rapid Rise of the River—Open Water—Arrival of the Great Snipe—Pallas's Sand-martin—Common Sandpiper—Characteristics of the Native Tribes—Ship Repairs—Pine Bunting—Ice lost in the Forest—Glinski's Industry—Ruby-throated Warbler—Waxwings—Nutcrackers—Death of a Tungusk—Funeral Rites—Diseases of the Natives—Their Improvidence—Uselessness of the Priests.

It rained off and on the whole of Saturday the 9th of June, nevertheless birds were plentiful. The first great rush of migration seems to take place as soon as the ice

and snow melt. Indeed many birds, as we have seen, in too great a hurry to reach their breeding-grounds, overshoot the mark, and, finding no food, are obliged to turn back. Any little oasis of land in the vast desert of snow, like the cleared ground between the house and the ship, is soon full of birds, and I found myself in a favourable situation for noting the new arrivals, some of whom were almost sure to be attracted by the black spot, and to drop down to feed. I was constantly running in and out, and made an excellent bag. Unfortunately our position did not command a good view of the chief stream of migration, which appeared to follow the main valley of the Yenesei. There were no bare hills in the neighbourhood from which to watch, and our house stood on a small patch of cleared ground surrounded by forest except on the river side. Very few large flocks of birds passed over, and those which visited us appeared to be stragglers from the great line of migration. They stayed a few hours to feed, hurried on again, and fresh stragglers took their places. The day's bag, however, added four new species to my list :—the yellow-breasted bunting (*Emberiza aureola*), the ruff, the sand-martin, and Middendorff's reed-bunting (*Emberiza passerina*). In addition to these novelties, I secured four Asiatic golden plovers and a couple of dusky ouzels. The latter were singularly tame compared with the fieldfare and redwing, both of which were common but very wild. In the evening I added a fifth bird to my list, namely the dotterel.

For three days we had seen no snow-buntings, but shore-larks and Lapland buntings were still common. A few swans and geese passed over, and ducks were flying about in all directions.

All day the wind was north and north-west ; and the river rose more than it had ever done in one day before.

The current was still up the Kureika, but as far as we could see both rivers were almost clear of ice.

On the morning of Sunday we had a breeze from the west with drizzling rain, and an open river gently rising, with a slight current up the Kureika. By noon the wind dropped and the water began to fall. The afternoon was calm but cloudy, with an occasional gleam of sunshine and now and then a shower of rain. The Yenesei southwards seemed to be clear of ice, but in the afternoon the Kureika was one crowded mass of pack-ice and floes, drifting down to the sea at the rate of three to four knots an hour. Birds were not very numerous, but I shot more thrushes than usual. A peasant from the opposite village brought me a couple of ducks, a wigeon, and a red-breasted merganser. In the afternoon I shot a pintail duck and saw a diver for the first time, but whether red-throated or black-throated I was not near enough to determine. The forest was still impenetrable, though the rain had made havoc with the snow.

We had a warm south wind on the following day, and the march-past of ice continued down the river, getting slower and slower, and coming to a final block about noon. In the afternoon the wind shifted round to the west, the river began to rise slightly, the tide in the Kureika turned, the ice which had not rounded the corner into the Yenesei was marched back again, and in the afternoon and evening we had open water.

Birds were not quite so numerous as heretofore. A party of two or three dotterels came down to feed, and by the river-side I came across a couple of ruffs, a pair or two of terek-sandpipers, a golden plover, and a few ringed plover. I nevertheless succeeded in adding four new species to my list—the common skylark (the only example I obtained in the Arctic Circle), the double snipe,

and the Siberian stonechat, and what I took to be the house-martin. Several pairs of the latter arrived, and were soon busily hawking for flies and occasionally examining their old nests. I shot a couple, so that I might have tangible evidence of the existence of this bird in the valley of the Yenesei. A few weeks later they swarmed in countless thousands, and I might easily have obtained a score at a shot. The reader may therefore imagine my disgust when on my return home I found that my two birds were not the common house-martin after all, but a nearly-allied species, Pallas's house-martin (*Hirundo lagopoda*), a bird so rare that the British Museum did not possess a specimen of it, and that besides my two skins the species was solely represented in the British Islands by a unique skin from Japan in the Swinhoe collection.

The fine weather continued on the following day, the river went on rising slowly, the Kureika ice stopping the way ; it scarcely made a verst the whole day.

There were very few birds. The shore-larks were all gone. Only a few stray Lapland buntings were left. Now and then a plover or a pair of sandpipers paid us a short visit. The martins had a large accession to their numbers, and flew round the house like a swarm of bees. It was now possible to plough our way through the forest ; for the snow was very soft, and melting rapidly. Bluethroats and willow-warblers were the principal songsters. The simple notes of the redwing, the unobtrusive song of the Little bunting, and the cheerful call of the Siberian chiffchaff, were also very frequently heard. Both the double snipe and the pintail snipe were common enough. A couple of white-tailed eagles flew over about noon. Now and then a few late swans passed over, but the geese seemed to have all gone to their breeding-

places. The day added only one bird to my list, the common sandpiper.

I had a talk with Schwanenberg about the Asiatics, as he called the natives. He said the Ostiaks are very friendly people, but the Tungusks are bad, and think nothing of shedding human blood. The Dolgans again are good people. The Yuraks are dangerous, and the Samoyedes vary according to locality.

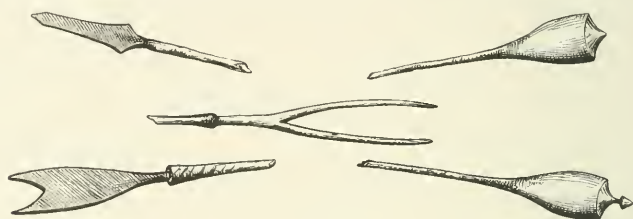
Matters were looking somewhat brighter at the ship. The carpenter was busy making a new rudder. At low water, when the stern was aground, he did some caulking, and as the vessel was only leaking a little we were in hopes that she might yet be made seaworthy after all.

The next morning the wind was north-east, and changed in the afternoon to south-west. The weather was as changeable as the wind: we had clouds, sunshine, heavy gales, thunder, and rain. Scarcely a bird came near the house all day, but before breakfast I shot a very interesting one close to the door—a pine-bunting (*Emberiza leucocephala*). I also secured a reed-bunting, the common species, a larger and browner bird than the one I got on the 9th. I shot a hazel-grouse in the forest, but saw nothing else of special interest. The Siberian chiffchaffs seemed common enough, but snow still lay too thick upon the ground to hunt them successfully.

The river rose considerably during the following night, but during the day it fell slightly, and the current was down the Kureika. Surely, we thought, this *must* be the last march-past of ice. From what Schwanenberg told me, I fancy half the ice that goes up the Kureika never comes down again. He said that some ten versts from our quarters the banks of the river were low. When he came back from his wild-goose chase after graphite, this part of the country was flooded for miles on each

side of the river ; hundreds of acres of ice had drifted into the forests, and when the water subsided frozen blocks would probably be stranded among the trees and gradually melt on the ground.

The villagers of the other side of the river brought us a few birds which they had secured, so Glinski thought he would try how many he could skin in one day. He began at nine A.M. and finished at two the next morning.



OSTIAK ARROW-HEADS

Allowing a couple of hours for meals and a "papiross" afterwards, this would make fifteen working hours, during which he skinned forty-six birds. I labelled them all, and gave them the last finishing touch. I had arranged to pay all his expenses, and to give him ten kopecks a skin in addition to his twenty roubles a month ; so he made a very good thing of the bargain.

The ice was still straggling down, but slowly, on the 14th. The wind was south in the morning, with rain, but it cleared up at noon, and the evening was bright, with scarcely any wind. I had three rounds in the forest. Before breakfast I shot a ruby-throated warbler (*Erithacus calliope*). He had a wonderfully fine song, decidedly more melodious than that of the blue-throat, and very little inferior to that of the nightingale. When I first heard him sing I thought I was listening to a nightingale ; he had his back towards me when I shot him, and I was astonished to pick up a bird with a scarlet throat. The feathers were as glossy as silk, and when I

skinned him I thought I had rarely, if ever, seen so beautiful a warbler. It seems that a fine voice and gay colours do sometimes coexist in birds as well as on the stage. In the afternoon I shot another very interesting bird, the blue-rumped warbler; I did not hear his song when I came upon him; he was busily engaged searching for insects, principally at the roots of trees. Nor was my morning's second walk entirely a blank, as I shot a yellow-browed warbler. The snow in the forest still made walking difficult and disagreeable. I saw a small flock of perhaps half a dozen birds, which, judging from their notes, I am all but sure were waxwings; I could not however get near enough to identify them.

Whilst I was walking in the forest, picking my way amongst the swamps and the few remaining snow-fields, I was delighted once more to hear the alarm-note of the nutcracker. I was, however, unable to get a sight of the bird. A fortnight before they had been common enough near our quarters. These birds seem to be well aware of the fact that offal and scraps of food of all kinds are always to be found in winter near the habitations of man. Their tameness had been quite absurd. Sometimes the Ostiak children shot one with a bow-and-arrow, and occasionally one was caught by the dogs. When the breeding season began they seemed entirely to change their habits. About the 7th of June they retired, apparently, into the recesses of the forest. I was very



RUSSIAN IKON
(Brass and enamel)

anxious to secure a series of their eggs, and had carefully looked after them, feeding them with the bodies of the birds I skinned. They treated me, however, in the most ungrateful manner. As soon as the snow was melted from most of the ground they vanished, and all my efforts to discover their breeding-place proved in vain, though I offered a considerable reward for a nest containing eggs. The Russians call the nutcracker the *verofky*, and both the peasants and the natives assured me that no one had ever seen its nest. With the exception of a couple of birds which I picked up afterwards in full moult, I saw nothing more of them until they reappeared in flocks on the return journey.

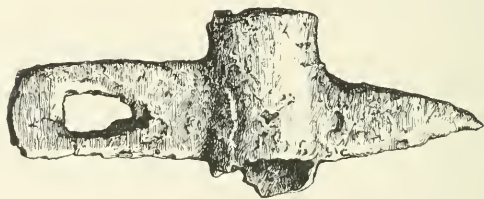
In the evening I spent some time watching the double snipes through my binocular. With a little caution I found it easy to get very near them, and frequently, as I sat partially concealed between a couple of willow-bushes, I was able to turn my glass on two or three pairs of these birds, all within fifteen or twenty yards of me. They had one very curious habit which I noted. They used to stretch out their necks, throw back the head almost on to the back, and open and shut their beaks rapidly, uttering a curious noise, like running one's finger along the edge of a comb. This was sometimes accompanied by a short flight, or by the spreading of the wings and tail. The double snipe is by no means shy, and allows of a near approach. When it gets up from the ground it rises with a whirr of the wings like that of a grouse, but not so loud, whilst the pin-tailed snipe gets up quietly. I did not succeed in finding the nest of the double snipe, but I have no doubt it breeds in the valley of the Kureika, as it was still frequenting the marshy ground when we weighed anchor in the ill-starred *Thames* on the 29th of June, and I noticed it in

the same locality when I returned in the *Yenesei* on the 2nd of August.

About this time a Tungusk died in one of the chooms of the Ostiaks. He had been a servant of our landlord, Turboff. For many months he had been suffering from a chest complaint, but the disease which ultimately killed him was scurvy. Some days before he died we tried to persuade him to drink lime-juice, but it was of no avail. He evidently had not very much confidence in our medical knowledge, and did not seem to think it a matter of any importance. I suppose he shared the opinion now getting so prevalent, that between good medicine and bad medicine there is a world of difference, but that between good medicine and no medicine there is scarcely any difference at all. The Ostiaks buried the poor man; they begged from us some boards to make a coffin, and the corpse was placed in it; an axe was then waved three times up and three times down the body, the lid was nailed down, and a grave hastily dug in the forest. At the foot of the grave a small pine-tree was growing. It was roughly squared as it stood, a slit made in the trunk, and a cross-bar inserted.

We found scurvy and chest-diseases to prevail a good deal, especially amongst the natives. The intense cold of the long winter affects the throat and lungs, and asthma, bronchitis, or consumption is the result. During the winter also, fresh vegetable diet is very scarce. The people preserve the cranberries, which grow so abundantly during the summer, but they are so improvident that they use the berries in their tea, so long as they last, and in spring, when the need for them is greatest, the stock is exhausted. There are no doctors. If the government combined with the office of priest that of doctor some good might be effected. At present the

priests are absolutely useless ; their offices, in the Greek Church, are so mechanical that they might be performed almost equally well by machinery. In many cases the priests are worse than useless ; they have nothing to do, and, under the pretext of keeping certain days holy, they encourage the people in drinking to excess, and in idling away valuable time. Russia stands sorely in need of an Isaiah to proclaim the truth that the "holy days and the feast days are an abomination."



BRONZE FROM ANCIENT GRAVE NEAR KRASNOYARSK



SUMMER QUARTERS ON THE KUREIKA

CHAPTER XXXV.

FULL SUMMER AT LAST.

Trip Across the Yenesei—Lost in the Forest—Second Visit to the other Side of the Yenesei—Number of Birds—Striped Squirrels—Gulls in Trees—A New Bird—The *Ibis*—Song of the Yellow-browed Warbler—Ostiak Fishing Season—Observations made across the Kureika—Nest of the Little Bunting—Eastern Stonechat—Another Round in the Forest—Von Gazenkampf again—A System of Plunder—Russian Commercial Morality.

FRIDAY, the 15th of June, was hot, with a south wind. The water continued to rise, and the ice continued to straggle down the Kureika. In the morning Glinski and

I had a row up the river. We saw some common sandpipers and shot one. We also secured a female reed-bunting and a Siberian chiffchaff in the willows, now half under water, and we shot a pair of pine grosbeaks in the forest.

Some peasants from the village on the other side of the Yenesei rowed across, bringing us some birds. Amongst them was a green sandpiper and a curlew sandpiper in full breeding plumage. They gave such a glowing account of the number of birds near their village that I went back with them. It took us nearly two hours' rowing against wind and tide to reach our destination. I found they had not exaggerated; birds abounded. The country was flatter, and thinly sprinkled over with birch-trees. There were several lakes and pools of water, and more grass and willow-swamps. I shot a female hen-harrier, a bird I had not seen since the snow-buntings left. I also shot a common gull, which completed my identification of this species made on the 1st of June. I saw willow-grouse and black grouse and numberless ducks. I added to my list both the red-throated and the black-throated divers, the red-breasted merganser, the golden-eye duck, and the goosander, and frequently recognised the wild cry of the scaup duck. I found the red-necked phalarope very abundant in the pools, and as tame as usual. I listened to a sedge-warbler for some time, but did not succeed in shooting it. I also followed a cuckoo, but could not get a shot. I supposed it to be the European bird, but it had quite a different voice. Instead of crying "cuckoo" it made a guttural and hollow-sounding "*hoo'*," not unlike the cry of the hoopoe. I afterwards secured an example of this bird, and found it to be the Himalayan cuckoo (*Cuculus intermedius*). I had an excellent opportunity of listening

to the song of the fieldfare. The call-note of this bird, *tsik-tsak*, is continually heard, but the song seems confined to the pairing season; it is a low warble, scarcely deserving to be called melodious.

The excitement of the chase, the appearance of species new to my list, and the abundance of bird-life generally, caused me to forget that time was flying. The difference between day and night in these latitudes at this season of the year is so small that I failed to notice that it ought to be evening, and that the sun must before very long prepare to dip below the horizon for an hour or so, until other sensations reminded me that it must be long past dinner-time. I looked at my watch, was astonished to find it so late, took out my compass, for the sky was overcast, and steered due east with the intention of striking the Yenesei and of following the course of its banks until I reached the village. Before long I caught a glimpse of a sheet of water through the trees, but on reaching the shore I was astonished to find that it was not the Yenesei. Though it stretched nearly north and south as far as the eye could reach, it had little or no stream, and was not more than half a mile wide. Now the Yenesei had a current of at least four miles an hour, and was three miles wide. I climbed up a tree in the hope that a distant view of the great river might be thus obtained, but it was of no use. In every direction an endless series of tree-tops stretched away to the horizon. I realised the fact that I was lost in the forest—a forest perhaps five thousand miles long by more than a thousand miles wide. I comforted myself with the reflection that it could only be a question of time, that one end of the sheet of water before me must be connected with the Yenesei, and that if I took the wrong direction to-night I should nevertheless be able to find

the right one on the morrow. My game bag was full, and if the worst came to the worst I could do as I had seen the Ostiaks do. Fortunately, however, I discovered that in my haste to explore new ground I had neglected to take out of my bag a pot of Liebig's extract of meat, with which I had provided myself before crossing the river. Sitting down on a fallen tree-trunk, I dined as best I could on my solitary dish. I then walked for an hour along one bank of the sheet of water without any sign of its coming to an end. I doubled back, and had reached the place whence I started, when I debated the advisability of having a night's rest on the ground. Visions of hungry bears just awakened from their winter's sleep floated before my imagination, and I decided that I was not tired enough to go to bed, so started to explore the creek in the opposite direction. Presently I fell in with an owl and chased it for some time. Other interesting birds then claimed my attention, until in the excitement of the chase I almost forgot that I was lost. I had wandered away from the creek, and seeing a slight elevation comparatively bare of trees I made for it, intending to get my bearings again from the compass. On reaching the place, however, I was surprised and delighted to find the river within sight. Arriving at the bank I could just discern the mouth of the Kureika on the opposite shore, and by midnight I reached the village, and was rowed across to our quarters loaded with spoil, dead tired, and a little unnerved with my adventure in the forest. When it was all over, I found that I had been more frightened than I suspected at the time. How I got right at last still remains a mystery to me.

Migration was still going on. As we crossed the river in the small hours of the morning, flocks of ducks

were still flying north, and I might have shot a short-eared owl if I had not been too sleepy.

It was astonishing to see the quantity of wood that was floating down, but as we coasted the shore to avoid the current, we easily saw whence it all came. In many cases the banks were undermined for six or eight feet; in some places they had fallen in, and the trees growing upon them were hanging down in the water. The banks are nothing but sand and earth; the river evidently widens every year, and carries an immense quantity of mud down to its mouth.

The following day I chronicled two arrivals, the first steamer from Yeneseisk and the first common house-sparrow. The steamer, which was a paddle-boat belonging to the Mayor of Yeneseisk, unfortunately did not bring the mails. It brought us, however, startling news—that Russia had declared war against Turkey, and had already taken several forts; and that England was at first inclined to help Turkey, but was prevented from doing so by the outbreak of a revolution in India!

I did not go far from home in search of birds, but a peasant brought us a Bewick's swan. A brisk breeze from the south had blown all day; it veered round to the east in the evening, when some enormous floes of ice went down the Kureika. At 10.30 P.M. we had one of the finest rainbows I have ever seen.

Spring flowers were now rapidly making their appearance. One that seemed to be our wood anemone was already in flower. Patches of snow were still lying in the forest, especially on the northern slopes.

During the next day the ice was still straggling down the Kureika, but not in sufficient quantity to close our little port, so I gave an Ostiak and his wife a couple of

roubles to row Glinski and me across the Yenesei in their lodka. The distance was computed to be four versts, but the current took us down a verst below the village, and this verst we had to row back up-stream. We were just over an hour making the journey. The Starrosta of the village gave us quarters, and we planned to have three days' good sport. A peasant soon brought us thirteen golden-eye ducks' eggs, with the down out of the nest. He told us that he found the eggs in a hollow tree. He also brought two common gulls' eggs. The great snipe I found even more common than on the other side of the river. In the evening I watched numbers of them through my binocular. They stretched out their necks, threw back their heads, opened and shut their beaks rapidly, uttering that curious noise like the running of one's finger along the edge of a comb, exactly as I had heard them before.

The scarlet bullfinches also were very numerous. The male was generally perched conspicuously in a birch-tree warbling a few simple notes, which sounded very like the words, "I'm very pleased to see you," with the emphasis on *see*. The martins were busy building their nests.

I turned out at four o'clock the next morning, and had a long round before breakfast. The number of birds was perfectly bewildering. I found two wigeons' nests, one with seven eggs and the other with five. I shot a sedge-warbler, and a couple of Siberian chiffchaffs, also a small bird whose song resembled somewhat the trill of a redpoll; I was surprised to find it to be the Arctic willow-warbler. The reed-bunting was common, but I did not see the smaller species.

I was well rewarded for getting up so early. There can be no doubt that ornithological observations are much

more easily made in the early hours of morning immediately following sunrise than at any other period of the day. It requires some courage to turn out ere the day has got properly aired, but an ornithologist is always well rewarded for his trouble. Birds are on the feed and can be easily approached, and in spring they are in full song. I regarded my morning's work as amply repaid by two important discoveries : first, that of the song of the Arctic willow-warbler ; and second, the identification of the sedge-warbler, which I had previously only partially identified by its song. The bird I shot was, so far as I then knew, the first sedge-warbler ever shot in Asia, but I discovered on my return home that Severtzow had met with it in Turkestan, though his identification was doubted by many ornithologists. I afterwards found it extremely common in suitable localities on the banks of the Yenesei. Of course this bird is only a summer visitant to Siberia, and a very interesting problem presents itself for future ornithologists to solve : Where do the Yenesei sedge-warblers winter, and by what route do they migrate ?

In the afternoon we had rain, but in the evening the sun came out again very hot. I found this an excellent time to pick up the small warblers on the banks of the kuria, which forms almost an island in the summer. In a couple of hours I had shot three Siberian chiffchaffs and a couple of sedge-warblers. I also recognised the redpoll-like notes of the Arctic willow-warbler, and secured another bird. I shot a male shoveller duck, and found a nest with four eggs in it, which I supposed to belong to this species ; I kept the down in it, to assist its identification. The female uttered a cry like *pape* as she flew away.

I was surprised to see several small-bodied long-

tailed animals in the slender branches of the hazel-trees, sometimes twelve and twenty feet aloft. As they ran along the ground or up the trunk of the tree, they had all the actions of our squirrel. They proved to be striped squirrels.*

The next day was dull, with heavy gales from the west, but the frequent showers did not seem to diminish the number of birds. I shot a common gull after having watched it perching in a larch-tree; Harvie-Brown and I had noticed this habit of the gull in the valley of the Petchora. Two or three times I had caught a passing glimpse of a dark-coloured thrush, with a very conspicuous white eyebrow. I was now fortunate enough to secure one, as it was feeding on the ground in a dense birch plantation. It is a most beautiful bird, the Siberian ground-thrush (*Geocichla sibirica*), but it seemed to be very rare and very shy.

The fieldfares, which had hitherto been very wild, were now comparatively tame. They were in full song, if their subdued chatter be musical enough to be called a song. They often sing as they fly. That day I shot a new bird, the mountain hedge-sparrow (*Accentor montanellus*). I also found another wigeon's nest with six eggs in it.

The next morning I secured a couple more males of my new hedge-sparrow. They seemed wonderfully quiet birds, I did not hear them utter a note. In the afternoon we saw Kitmanoff's steamer pass on its way to the Kureika; it had my new schooner the *Ibis* in tow, built by Boiling in Yeneseisk. I had arranged with Captain Wiggins to go shares in her with me, his part of the contract being to finish her, and rig her out English fashion. In the half-wrecked condition of the *Thames*

* *Vide* note, p. 308.

we felt it might be useful to us all to be provided with two strings to our bow. At sight of the steamer we lost no time in packing up our things and crossing the river. We had had three days' hard work. Glinski had skinned ninety-nine birds, and we were taking about thirty more with us to skin on the other side.

On our return I found that during our absence the Arctic willow-warbler had arrived in some numbers. Early the next morning I heard the now well-known song from the door of our house. After breakfast I had a turn in the forest, and heard many of these birds singing. The song is almost exactly like the trill of the redpoll, but not quite so rapid and a little more melodious. The bird did not seem shy, and I soon shot four. Nor did it appear to me so restless as most of the willow-warblers. The Siberian chiffchaff, for instance, is a most unquiet bird; it seems always in a hurry, as if its sole object were to cover as much ground as possible. On the 'extreme summit of a spruce fir I discerned a little bird shivering his wings and making a feeble attempt to sing. It began with a faint plaintive note or two, then followed the "weest" of the yellow-browed warbler by which I recognised the species, and, lastly, it finished up with a low rapid warble which appeared to be variations upon the same note. This is probably all the song of which this little bird is capable, but every particular is interesting respecting a warbler which now and again deigns to visit the British Isles.

Whilst walking through the forest I suddenly came upon a bird preparing to fly from a dense clump of trees, and was fortunate enough to shoot it before it got well on the wing. It proved to be an example of the

Himalayan cuckoo, whose extraordinary note had attracted my attention some days previously.

The heat had been great during the last two days, with scarcely a breath of wind stirring, and the snow had melted everywhere except a few patches here and there in the forests, where it had drifted to an unusual depth. The river had fallen considerably, and only now and then a stray block of ice was to be seen floating down the Kureika. The Ostiaks were busy fishing, and three chooms were pitched on our side of the river and four on the other. The season had not yet fairly commenced, the water was very cold, and fish were very scarce, but every day brought fresh signs of the rapid approach of summer, and the Ostiaks were very busy and evidently in high spirits at the close of the long winter. I visited each fresh family that arrived, in hopes of picking up something interesting, but they were all evidently very poor. From one man who seemed a little more enterprising than the others I procured a rude kind of spoke-shave which he was using to plane his new oars into shape, and a drill which was almost the exact model of one I bought from a Samoyede in the Petchora. The Ostiak told me that he had made these tools himself.

The 22nd of June was oppressively hot, with a slight breeze occasionally from the south. It was evident that not only had summer come in earnest, but migratory birds also had finished coming. Though I diligently took my round in the forest every morning, I found many birds conspicuous by their absence, and had no new arrivals to chronicle. The Arctic willow-warbler was now very common, and the principal songster. Besides its song it utters an occasional note, sometimes a single one, *dzt*, sometimes made into a double note by dwelling upon the first part, *d-z, zit*. Little buntings were also there in

great numbers. Now and then I met a brambling, a Lapp-tit, a yellow-headed wagtail, or a sedge-warbler; but the willow-warblers and bluethroats, which had been so common a week back, had nearly all disappeared. I got a redwing's nest with three eggs.

Early on the following morning we had rain, and as we crossed over to the ship to breakfast a white fog covered the river; it cleared away before noon, and we had a warm sunshiny day. Boiling (who had come down in Kitmanoff's steamer) and I rowed across the Kureika, and we spent the day on the other side. Birds were extremely numerous, and I solved some very important problems. During the past week I had repeatedly heard the song of a thrush with which I was not acquainted, but hitherto I had never been able to get a shot at the bird. This thrush was a very poor songster, but he had a very splendid voice. He seldom got beyond one or two notes, but in clearness and richness of tone these notes were fully equal to those of the blackbird. I was fortunate enough to secure a bird, which turned out to be the dark ouzel. It was a female with eggs large enough for a shell, so that I hoped soon to find a nest. I saw several pairs flying about. At frequent intervals I had also heard a short unpretentious song, not unlike that of our hedge-sparrow. It came from a bird generally perched aloft on the top of a high tree, from which, after warbling its short song, it would dart off to another. As yet I had only been able to shoot a single specimen; this time I succeeded in securing another. It was the mountain hedge-sparrow.

On the banks of the river where the Kureika joins the Yenesei are islands and peninsulas clothed with willows. These were nearly all covered with some feet of water, so that one could squeeze a boat amongst the trees. As

we rowed past this willow cover, I heard a familiar song, and pointed the bird out to my companion; it was wheeling round in circles overhead, occasionally descending into the willows. I recognised it to be the Siberian pipit which Harvie-Brown and I had discovered in the Petchora. Some hours after we first sighted it, I was lucky enough to get within shot of one singing in a willow-tree; I had, of course, expected to find this bird in this locality, as it had already been shot east of the Lena.

My fourth important observation that morning was, however, the most valuable of all; in fact, by it I attained one of the special objects of my journey. A quarter of an hour before we left the opposite shore, as I was making my way down the hill to the boat amongst tangled underwood and fallen tree-trunks, rotten and moss-grown, a little bird started up out of the grass at my feet. It did not fly away, but flitted from branch to branch within six feet of me. I knew at once that it must have a nest near at hand, and in a quarter of a minute I found it, half hidden in the grass and moss. It contained five eggs. The bird was the Little bunting. It hovered about so close to me, that to avoid blowing it to pieces I was obliged to leave the nest and get a sufficient distance away. It seemed a shame to shoot the poor little thing, but the five eggs were, as far as I knew, the only authentic eggs of this species hitherto obtained, therefore it was necessary for their complete identification. The nest was nothing but a hole made in the dead leaves, moss, and grass, copiously and carefully lined with fine dead grass. I can best describe the eggs as miniature eggs of the corn-bunting.

The forest on that side of the river was principally larch, spruce, pine or cedar, and the trees were larger

than upon the side where our headquarters were. The two commonest birds were the yellow-browed warbler and the Arctic willow-warbler, and the songs or notes of both were constantly to be heard. Sedge-warblers were frequent on the banks, and bramblings in the forest.

In the evening I had a long chase after two birds, whose song resembled somewhat that of the wheatear. I had to take a boat at last to get to them. They proved to be two fine male Eastern stonechats, and though I followed them for at least an hour, I never once heard the call-note—*u-tzic-tzic*—which our bird so constantly utters.

The next morning Boiling, I, and one of the engineers rowed across the Kureika, and had another long round along the banks of the Yenesei and in the forest. We saw no more of the dark ouzels, but occasionally we heard their note. The yellow-browed warbler and the Arctic willow-warbler were as plentiful as ever, but we could find no trace of their nests. These birds were both in full song, and had evidently not begun to build. I found a nest of Temminck's stint with two eggs. In the willows near the shore sedge-warblers were singing lustily, and once or twice we heard the Siberian pipit. There were several pairs of black ducks across the river, probably black scoters.

In the afternoon Sotnikoff's steamer arrived. Unfortunately for us, as fate would have it, she carried as one of her passengers the Zessedatel of Turukansk. He soon boarded us, and as a matter of course he soon began to beg. The captain was his first victim; from him he extracted a handsome pistol and some preserved fruit. I presented the old gentleman with a bottle of sherry and some cigars, but I absolutely refused to let him

annex anything ; he tried hard to cajole me, first, out of my double-barrelled gun, then of my single barrel, and lastly he made a dead set at my binocular, but I denied him everything, and he left me with a sour countenance. Certainly, in all my experience, I have never met with so shameless a beggar as old Von Gazenkampf. His name led one to expect that he had some German noble blood in his veins, and his aristocratic appearance encouraged the supposition, but one soon discovered that he belonged to the corrupt school of Russian officials in the worst days of serfdom. It is scarcely possible to believe that the Government of St. Petersburg is aware of the rascalities practised in remote corners of the empire, and no doubt an official sent from headquarters to examine into the administration of these distant districts, would on his arrival be heavily bribed to keep silence. It was lamentable to see the universal system of plunder carried on. The Russian peasants plunder the poor Ostiaks, the Government officials and the Yeneseisk shopkeepers plunder the Russian peasants. Commercial honour seemed almost unknown on the Yenesei. Let us take an instance. During our stay the Mayor of Yeneseisk was a merchant, who had formerly been a pedlar. Like many of the shopkeepers of that unfortunate town, he came from the district south of Nishni-Novgorod. He was at that time computed to be worth two million roubles. He had failed twice, dishonourably it was said, and paid each time five shillings in the pound. We had a fine specimen of his mode of transacting business. We bought sundry articles from him, paid for them, and got a receipt. These were of the value of seventy-three roubles, and were to be brought down by the steamer to our ship with other articles ordered. When the river became navigable, the goods

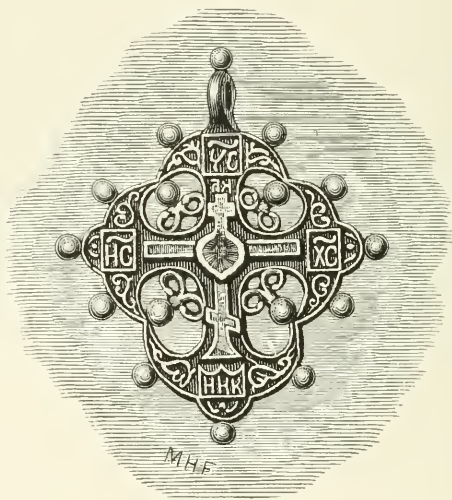
were promptly delivered, and the account hurriedly presented for payment as the steamer was on the point of leaving to go farther down the river. Fortunately for us one of our party could read Russian. He found that the seventy-three roubles already paid were included in the amount claimed, and their payment thus demanded a second time. Twenty odd casks of tallow, and about as many sacks of biscuits, were also to be brought down to us by the steamer; in both cases one package less than the proper quantity was delivered. The captain promised to have these missing packages found, and left for usat Dudinka, but I felt certain that we might as well at once have written off the value to our already sufficiently large plunder account, and, needless to say, we never heard any more of them.

It would be unfair to represent this entire absence of any feeling of commercial honour as in any way an exclusively Russian characteristic. It is Asiatic, Oriental. The moment you have crossed a line which one might draw from Königsberg to Trieste, you have ceased ethnologically to be in Europe, and as far as race and character go you are to all intents and purposes in Asia. West of this line people do frequently act dishonourably, but they are ashamed of it, and it is only the temptation of the gain which reconciles them to the disgrace which they try to hide. East of this line it gives a man far more pleasure to cheat you out of a sovereign than to earn a sovereign in a legitimate manner. So far from



RUSSIAN IKON
(Brass and enamel)

being ashamed of it, he glories in it, and boasts of his cleverness. I do not think this enormous difference of national character is a question of climate, race, or religion. I take it to be purely a question of free government and just laws. The free man fears no one, and can afford to tell the truth. Under just laws, a love of justice and contempt of knavery rapidly develop themselves. The commercial immorality of Russia must be laid to the charge of its despotic government.



OLD RUSSIAN SILVER CROSS.



SAMOVEDE MAN

DOLGAN WOMAN

CHAPTER XXXVI.

LAST DAYS ON THE KUREIKA.

Birds begin to Grow Scarce—Absence of the Nutcrackers—Fertile Hybrids between Hooded and Carrion Crows—Nest of the Yellow-browed Warbler—Birds Plentiful in the Early Morning—Arctic Willow-warbler—Nest of the Dark Ouzel—Second Nest of the Little Bunting—Leaving the Kureika—New Birds Identified each Week—Parting with our Friends.

ON Monday, the 25th of June, I had a long round in the forest, but met with nothing of special interest. The only nest which I found was that of a redwing, containing four eggs. Birds were evidently beginning to become scarce again. Many had left for still more northerly

breeding-grounds, and those which remained had scattered themselves in the forest. The pairing season was over, and the songs with which the male birds had wooed their females were now for the most part hushed, the energies of the feathered songsters being apparently concentrated upon the engrossing duties of nidification. A few birds only seemed to have finished their nests, and occasionally serenaded their patient mates during the period of incubation. The bluethroats had disappeared altogether. Of the four willow-warblers the western species were seldom heard, but the three eastern species were the commonest birds in the forest. I shot a solitary nutcracker, a male in full moult, which, from the appearances observable on dissection, I presumed might have been a barren bird. The breeding haunts of the nutcracker remained a mystery which I was unable to solve. Probably they were quietly hatching their eggs in the remotest recesses of the forest. One of the Ostiaks brought me the nest of a hazel-grouse containing eight eggs. It was made of leaves, dry grass, and a few feathers.

On the afternoon of the following day I climbed up to the crow's nest which I had discovered on the 11th of May. It now contained two young birds; one looked much more thoroughbred hoodie than the other. I was unable to shoot the male, but I had often examined him through my binocular; he had a very grey ring round the neck, and showed a quantity of grey on the breast and under the wings. I shot the female; she had not quite so much hoodie in her. The feathers on the sides of the neck and on the lower part of the breast and belly were grey, with dark centres. The fact is now conclusively proved that these hybrids are fertile.

Late in the evening Boiling and I strolled through the forest. As we were walking along, a little bird

started up near us, and began most persistently to utter the alarm-note of the yellow-browed warbler, a note which I had learned in Gätke's garden in Heligoland. As it kept flying around us from tree to tree, we naturally came to the conclusion that it had a nest near. We searched for some time unsuccessfully, and then retired to a short distance and sat down upon a tree-trunk to watch. The bird was very uneasy, but continually came back to a birch-tree, frequently making several short flights towards the ground, as if it were anxious to go to its nest, but dared not whilst we were in sight. This went on for about half an hour, when we came to the conclusion that the treasure we were in search of must be within a few yards of the birch-tree, and we again commenced a search. In less than five minutes I found the nest, with six eggs in it. It was built in a slight tuft of grass, moss, and bilberries, semi-domed, exactly like the nests of our willow-warblers. It was composed of dry grass and moss, and lined with reindeer-hair. The eggs were very similar in colour to those of our willow-warbler, but rather more spotted than usual, and smaller in size.

The special interest attaching to this discovery lies in the fact that the yellow-browed warbler has more than once been shot in the British Islands, and has thus obtained a place in the list of British birds. Its eggs were previously unknown; those obtained by Brooks in Kashmir having been lately discovered to belong to a nearly-allied, though distinct, species, the validity of which that keen-eyed ornithologist was the first to point out.*

The next morning Boiling and I rose at one o'clock, soon after sunrise, and rowed across the Kureika to explore the opposite banks of the river. The morning is

* It should, perhaps, be stated that the validity of this species has not been universally recognised by ornithologists.—ED.

without doubt by far the best time for birds. From sunrise to noon they were plentiful enough in the forest: the latter half of the day they were more rarely seen, and were much more silent. I secured another Siberian pipit, and found a pair of dark ouzels, evidently breeding. They showed so much uneasiness at our presence that we made a more careful search for the nest, and soon found one which I have no doubt was theirs. It was an exact duplicate of our song-thrush's nest, and apparently ready for the first egg. I discovered afterwards, however, that it yet required a final lining of dry grass.

After breakfast I had an unsuccessful search for the nest of the Arctic willow-warbler. The bird was common enough, but evidently it had not begun to breed. Often four or five of them would be singing together at the same time. As they did not arrive until a fortnight after the other three willow-warblers, we might fairly expect them to be late breeders.

In the afternoon I had a siesta, and in the evening strolled out again into the forest. I walked for a mile without shooting anything but a hazel-grouse, when suddenly a thrush flew off its nest with a loud cry, and alighted in a tree within easy shot. I glanced at the nest, snapped a cap at the bird with one barrel, and brought her to the ground with the second. I picked her up, expecting to find a redwing, but was surprised and delighted to find the rare dark ouzel. The nest was in a slender spruce, about fifteen feet from the ground, on an horizontal branch, some six inches from the stem. I lost no time in climbing the tree, and had the pleasure of bringing down the nest with five eggs in it—so far as I knew the first authenticated eggs of this species ever taken. The nest was exactly like that of a fieldfare, and the eggs resembled small, but richly-marked blackbird's eggs.

On the following morning I felt somewhat fatigued after the previous long day's work of twenty-four hours, but could not resist the temptation of having a short early stroll in the forest. It produced a very small bag, nothing but a solitary male bluethroat ; but I found, however, a second nest of the Little bunting containing two eggs. I carefully marked the spot, hoping to get the full clutch of five eggs if we remained long enough for the purpose. A north wind had been blowing for some days, and the captain was taking the opportunity of getting the little schooner into order.

The next morning I returned to the spot I had marked, and took the nest of the Little bunting, which had now three eggs in it. At noon we packed up, and went on board, towing our unfinished schooner with us. We got up steam and cast anchor some fifty versts down the Yenesei.

We were all heartily glad to leave the Kureika. The sailors who had wintered there were sick of the place ; and the captain, who had seen his ship all but lost, could have no pleasant recollections of the trap into which he had fallen. For my own part I was anxious not to be too late for the tundra, which I looked upon as my best ground. I had been about ten weeks in the Kureika.

The following table of the number of species of birds identified during each week will show at a glance the date of the arrival of the mass of migrants :—

23 April to 30 April	.	.	.	.	.	12
1 May „ 7 May	.	.	.	.	.	2
8 „ „ 14 „	.	.	.	.	.	3
15 „ „ 21 „	.	.	.	.	.	3
22 „ „ 28 „	.	.	.	.	.	3
29 „ „ 4 June	.	.	.	.	.	13
5 June „ 11 „	.	.	.	.	.	33
12 „ „ 18 „	.	.	.	.	.	18
19 „ „ 25 „	.	.	.	.	.	3
						90

Comparing this list with that of the arrivals of migratory birds in the valley of the Petchora,* it appears that birds arrive much later in the valley of the Yenesei ; but it is possible that the difference may be an accidental one of season and not a constant one of locality. In the Petchora we found that the greatest number of migratory birds arrived between the 10th of May and the 4th of June, whilst on the Yenesei the arrivals were principally between the 31st of May and the 18th of June. These dates correspond with the time at which the ice on the two rivers broke up, in lat. 65° , namely the 21st and 31st of May respectively.

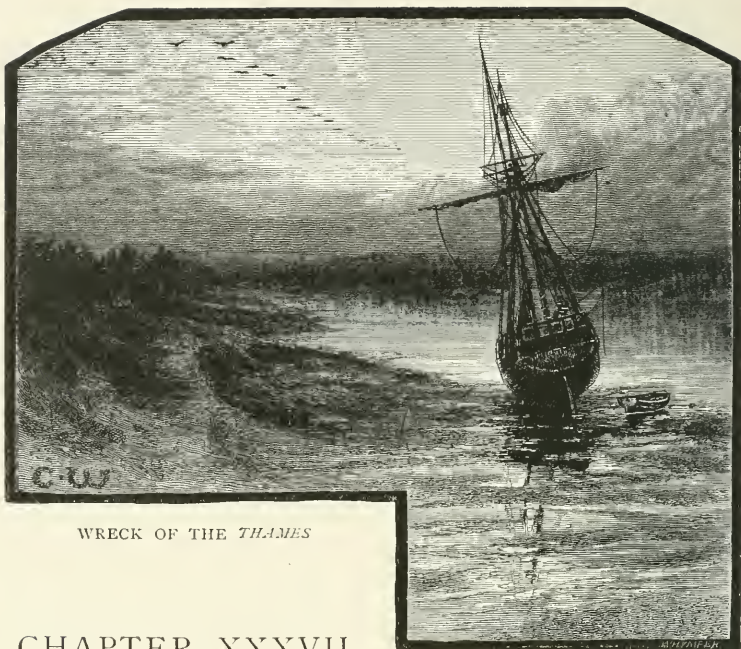
When we left the Kureika, of course we never expected to see it again ; so we took an affectionate leave of our landlord Turboff, and of the Starrosta of the village on the other side of the Yenesei. I believe they were sorry to part with us, although Captain Wiggins had had one or two quarrels with both of them. In one way or other they had made a considerable profit out of our long visit to their remote corner of the world. We had hired their dogs and their reindeer, paid them for labour of various kinds, bought milk, meat, and firewood from them, and made them presents of all sorts of things, and yet for all that it was easy to see that they looked upon the enterprise of Captain Wiggins with great jealousy. The Russians are an intensely conservative people. They look with suspicion upon anything new. Of course I never for a moment expected them to understand my reasons for collecting birds. From what Glinski told me they evidently considered it to be a cloak to hide some ulterior object. Captain Wiggins was perhaps a little imprudent in expatiating in broken Russ upon the wonderful benefits which the introduction of commerce

* See p. 241.

was to bestow upon the country. He told them over and over again that the success of his enterprise was to open the door at once to English commerce. This naturally aroused the jealousy of the men, who had practically a monopoly of the trade of the district. They were too short-sighted to see the advantage which such a change might bring them, and looked upon Captain Wiggins as a competitor. His scrupulous honesty in dealing with the natives, many of whom came to buy cotton goods and always received over-measure, was another cause of offence with traders who systematically cheated their customers, and took advantage of their necessities to over-charge them on every possible occasion. Nevertheless their innate Russian hospitality and good-nature overcame much of their prejudice, and they took leave of us with every mark of affection. As for the natives, they were really grateful for what little we had done for them, and persisted in kissing our feet. We left the settlement with gloomy anticipations of its future. Debt and drink continually drain everything of value into the hands of half a dozen merchants, who are gradually killing off the geese that lay the golden eggs.



TUNGUSK PIPE



WRECK OF THE *THAMES*

CHAPTER XXXVII.

THE LOSS OF THE "THAMES."

Contrary Winds—Aground on a Sand-bank—Ostiaks to the Rescue—
Visit on Shore—Nest of the Siberian Chiffchaff—Birds in the Forest
—Under Way again—Wreck of the *Thames*—Arrangements for the
Future.

ON Saturday, the 30th of June, we sailed down the river with a somewhat contrary wind, which obliged us to tack more or less, but the current helped us to the extent of at least three knots an hour. In the evening we cast anchor about one hundred and ten versts below the Kureika. I went on shore and found a third nest of the Little bunting, with five eggs somewhat incubated. The nest was lined with reindeer-hair. We had a heavy thunder-storm late at night, and after we had turned in the rain came down in torrents.

Sunday morning, the 1st of July, was almost a calm,

with rising fog which cleared off before noon. We were crossing the river to get to the west of one of the islands, when the current unexpectedly drifted us too near the shore, and we found ourselves suddenly aground on a sandbank, with a light wind and a strong current driving us against the point of the island. We spent the whole morning throwing overboard the ballast, and putting the wood and cargo on board the *Ibis*, but as quickly as we lightened the ship the water fell. Every now and then we took an anchor out from the vessel in a boat, and hauled in the cable with the steam winch. All our efforts proved vain, the anchors all came home, the bottom was evidently smooth ice, and the part of the anchor which dragged on the ground was polished like steel. All the afternoon we worked away, without apparently the ghost of a chance. We tossed half the wood overboard, filled the *Ibis*, hauled first at the bow and then at the stern, ran the engines full speed ahead, and then tried full speed astern, but the vessel was aground somewhere about midships, and we vibrated on a pivot, not gaining a single point.

In the evening a few Ostiaks came across in a boat to see what was the matter, and we set them to work to clear the bunkers of wood, and move the remaining ballast forward, hoping thus to raise the ship by the stern. Meanwhile the sailors took out an anchor, with three lengths of cable, and dropped it at a greater distance from the ship than they had hitherto done. It was eleven o'clock by this time, the men were exhausted, and this was our forlorn hope. We had all worked hard since five o'clock (eighteen hours), in a hot sun and amidst virulent mosquitoes (the *Culex damnabilis* of Rae), and the captain now decided that if he failed in this endeavour nothing more could be done. In the:

morning the ship would, no doubt, be high and dry on a daily enlarging sandbank, and we should have to dismantle her, sell her as a wreck in Dudinka, and go down the river in the *Ibis*. To our great surprise and delight, however, our last manœuvre succeeded. The anchor held sufficiently to draw us off; we steamed into deep water, and at one o'clock cast anchor in safety. From the Ostiaks we bought a sturgeon a yard long for half-a-crown, and some sterlet half that length for a penny a piece.

The following morning, whilst the Captain was taking in fresh ballast, I went on shore and had a few hours' shooting and birds'-nesting. The mosquitoes were swarming in clouds; there were so many between the eye and the sight of the gun that it was almost impossible to see a small bird. I came upon an encampment consisting of three Ostiak chooms, and about fifty reindeer. The shore was very muddy, and between the river and the forest was a long, gently-sloping bank, sprinkled over with willows. In these trees wisps of dry grass were hanging, caught between the forks of the branches, and left there after the high water had subsided. In one of these, about two feet from the ground, a bird had built its nest, or rather it had appropriated one of these wisps for its nest. There was scarcely any attempt at interlacing stalks. It was undoubtedly the most slovenly and the most loosely-constructed nest I remember to have seen. It was not much more than a hole, about two and a half inches in diameter, with one side a little higher than the other, the entrance somewhat smaller than the diameter of the interior, which was globular in form, and carefully lined with capercailzie and willow-grouse feathers. The tree in which it was built was about fifty yards from the small encampment, and the feathers of both these birds would naturally be found

outside an Ostiak's choom. As I approached, a little bird flew out of it, and began to fly uneasily from tree to tree, uttering the plaintive note which I at once recognised as that of the Siberian chiffchaff. I looked into the nest and saw it contained three eggs, pure white, with dark red, almost black, spots. I retired about twenty yards. The bird came back to the tree, and, having apparently satisfied itself that its treasures were safe, it began once more flying from tree to tree, still uttering its plaintive alarm-note. To be perfectly certain it was a Siberian chiffchaff I shot it, and returned to the ship with the first identified eggs of this species ever taken. I found, besides, two solitary fieldfares' nests,



SAMOYEDE PIPE

about a mile from each other, from one of which I shot the bird. So far as I could judge, the fieldfare was rather a rare thrush there, and it did not appear to be at all gregarious. During migration they were in small flocks of about half a dozen birds, but afterwards I saw them only in pairs. I also found three nests of Temminck's stint, from two of which I shot the birds. Sedge-warblers were very abundant, and a few pairs of bluethroats frequented the willow. I saw both the white wagtail and the yellow-headed wagtail. In the pine forests the Arctic willow-warbler was very numerous. Most of these birds were in full song, and apparently thought that there was no occasion whatever to hurry about nest building. One pair, however, were chasing each other through the forest, uttering a note I had not

heard before, a plaintive scream. I shot one, expecting to procure a new bird. Our willow-warbler, and also the yellow-browed warbler, were thinly sprinkled through the trees, the former preferring the birches and the latter the pines. I shot a scarlet bullfinch, and heard several singing.

On Tuesday, the 3rd of July, we weighed anchor early in the morning with a fair breeze, which at noon became strong enough to clear the decks of mosquitoes. The cabin we made habitable by a vigorous application of brown-paper smoke. We found the sterlet and the sturgeon delicious eating, the former the richer of the two. Now and then we passed small encampments of Ostiak chooms on the banks. The men were busy fishing, in their usual lazy fashion. They frequently boarded us, wanting to buy salt and to sell fish. We saw many birds as we steamed along, a large flock of ducks, a small party of swans, occasionally a gull, once a pair of terns, and once an eagle.

After dinner I turned in for an hour's nap. When I came on deck again I found that a serious accident had happened. In attempting to wear the ship, or box-haul her on her stern, she had refused to come round. The sails were in perfect order, each in the correct position for performing its required task. She was coming round very nicely, when suddenly, without any apparent cause, in spite of her helm, in spite of a monster patent jib, pulling hard with a fresh breeze, she swung back and shot towards the shore. She was then in five fathoms of water. She soon got into three and a half fathoms, and the captain to save himself let go the anchor. The sails were thrown back, which had the desired effect of throwing her head off-shore. By a most unfortunate accident, in coming back, she fouled

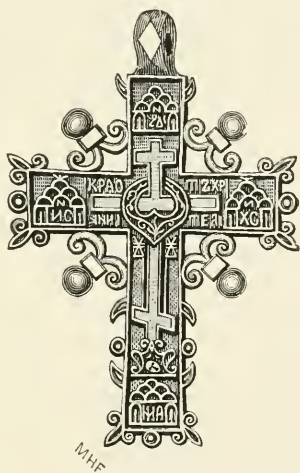
her anchor in two and a quarter fathoms, in such a position that the current prevented her getting off. Steam was got up, an anchor was taken out, and the vessel was soon hauled off the fluke of the anchor under her, but only to fall back into a shoal. When we had twenty pounds of steam with which to work, the propeller was put in action, the steam winch hauled on the cable, and a fair breeze from the south-west soon got us off the shoal. In two minutes she would have been in perfect safety, when, without a moment's warning, the wind suddenly changed to north-east, and drove her hard and fast into the shallow water before the sails could be furled. All our efforts to get her off were vain. The ballast we had put in after the accident on Sunday was thrown out, the wood was got back again into the *Ibis*, anchors were tried on several sides, but all came home, one was taken upon shore and the cable strained until it broke. The men worked hard all night, but by morning she was more than a foot aground, fore and aft, and as the water was falling rapidly, it was evident the case was utterly hopeless. Everything that could be done had been done, and the captain gave the vessel up.

Thus ended the career of the *Thames*, a melancholy close to a long chapter of accidents and hairbreadth escapes. The ship seemed fated. Why she refused to wear round in the first instance will probably always remain a mystery. Perhaps some treacherous undercurrent seized her keel, or possibly she fouled some hidden snag. Fouling her anchor in coming back was one of those accidents that will happen to the best-regulated vessels; but that, after having escaped both these dangers, a sudden and total change of wind should occur at the precise moment when she was sailing into

perfect safety, was one of those coincidences that a century ago would undoubtedly have been ascribed to the agency of supernatural powers of evil. This untoward accident was a heavy blow to all of us. We realised to the full the truth of Burns's proverb, that "the best laid schemes o' mice and men gang aft a-gley." The captain's hopes were totally frustrated. The good ship was for that year at least irretrievably stranded, and the following spring the ice would probably crumple her up like pasteboard. For my part I could only expect to reach the tundra too late for my best work, with the cheerful prospect, besides, of facing an overland journey of five or six thousand miles, with a little mountain of luggage. There was nothing left for it but "to grin and abide."

The first thing to do was to hold a council of war. Captain Wiggins declared himself determined if possible to complete his programme. If he could not return to England in the *Thames* he was desirous of making the attempt in the *Ibis*. The question was whether his men would consent to accompany him. I declined to commit myself to what I could not but consider a foolhardy enterprise, but expressed myself not only willing but most anxious to go as far as Golchika, and proposed that the future destination of the *Ibis* should be left an open question, to be finally settled on our arrival at that port. Wiggins fell in with this compromise at once, and began to complete the half-finished *Ibis*. Now that the *Thames* was *hors de combat* we could freely rob her of spars, sails, compass, and many other little things which would make the *Ibis* as complete as possible. Boiling assisted in these arrangements with hearty good will. He was as anxious as I was to reach Golchika, but the men worked sullenly, and it was evident that something

approaching a mutiny was in the wind. Wiggins told off four of the sailors to man the *Ibis*, but one of them refused to go on board without a clear understanding as to the ultimate destination of the little craft. Wiggins declined to commit himself to any route. The man persisted in his refusal to go on board ; Wiggins threatened to put him in chains ; the man would not withdraw his refusal. Mysterious entries were made in the log-book, and another man was chosen to fill his place. Order being thus restored, the completion of the *Ibis* was definitely arranged, and we returned to our bunks, none of us in the happiest of humours, but determined to make the best of a bad job.



OLD RUSSIAN SILVER CROSS



YURAK HUNTER

CHAPTER XXXVIII.

DOWN RIVER TO DUDINKA.

Wild Flowers—Willow-warbler's Nest—Windy Weather—Tracks of a Bear in the Sand—A Snipe's Nest—Nest of the Arctic Willow-warbler—The Captain and His Crew—British Pluck and Blunder—On the Way again—Measuring the Footprints of Swans—The River Bank—Purchasing Costumes of the Various Races—Manner of Hunting the Sable—Coal from the Tundras.

THE following day I went on shore for a few hours in the morning. The country was very flat, covered with stunted forests of birch, willow, and alder : pines rose in the distance, grass had already grown as high as our knees, and wild flowers of various kinds were in full

bloom. A sort of yellow pansy was the first to appear after the wood-anemone, the Jacob's ladder was common, a dwarf rose was just bursting into flower, and the air was fragrant with the aromatic rhododendron-like shrub, *Ledum palustre*; the wild onion and the wild rhubarb were flowering, and on the sand we sometimes found quantities of the graceful *Anemone pulsatilla*. Birds were abundant; I took two nests of the fieldfare only a few yards distant from each other, showing that they were to some extent gregarious, also a nest of willow-grouse with three eggs. In one part of the forest I heard a small bird flying round and round uttering a cry like *na-na-na*. Whilst I was watching it I was called away, but before leaving I fired at the bird and missed. I afterwards returned to the same place and saw and heard the bird again. Again I fired and missed it, and I then sat down to watch. The bird came within twenty yards of me, alighted in a birch, and in less than a minute dropped down on the ground. As I neither saw it nor heard anything more of it for five minutes I concluded that it had dropped into its nest. I walked up to the place; a fallen birch-tree was lying across a tussock of moss and bilberry. I tapped the birch-tree with my gun, and the bird flew out of the tussock. I soon found the nest, and turning round I shot the bird. It proved to be only our willow-warbler. This alarm-note was one quite new to me. The nest was as usual semi-domed, and profusely lined with feathers. The eggs were very small, and thickly marked with light red spots. I saw one or two snipes and shot two male Eastern stonechats. The martins were busy hawking for mosquitoes; some of them had eggs in their nests. Fortunately I brought a few home, for, as already stated, the species proved to be different from our European martin. We had a cold

north wind all the next day, with mist and rain. I did not go on shore, but spent the whole of my time in putting my things in order, getting the schooner ship-shape, blowing and packing eggs, and writing up my journal. The wind continued the following day to be north-east, blowing a stiff gale ; but it was warm, accompanied by occasional showers. I went on shore both morning and afternoon. Strolling on the muddy sand by the river bank I came upon the recent tracks of a bear, which animal the peasants said they had seen a week or two ago. I saw a short-eared owl and a hen-harrier, and shot a cuckoo, which proved to be the Himalayan species. I also took my fourth nest of the Little bunting, with six eggs. It was lined with dry grass, and one or two reindeer-hairs. I shot the bird. Almost immediately afterwards, as I was crossing a swamp, a snipe rose at my feet, fluttering in a manner that convinced me she had eggs. I shot her as she was flying away ; she proved to be the common snipe. The nest was made in a little tussock of grass and moss which grew out of the water, a deep hole having been hollowed in the moss, and lined with dry stalks of flat grass. It contained four eggs considerably incubated. A few minutes afterwards a willow-warbler flew out of a large tussock of grass, and began to utter the alarm-note of the Arctic willow-warbler : I shot it, but too hastily, and mangled it so much that it was scarcely recognisable. I soon found the nest, built in a recess in the side of the tussock. It was semi-domed, the outside being moss and the inside fine dry grass. There was neither feather nor hair used in the construction. It contained five eggs, larger than those of the willow-warbler and of a somewhat different character. Before they were blown they looked pink, but afterwards the

ground-colour became pure white, profusely spotted all over with very small and very pale pink spots. Very few authentic eggs of this species are even now known.

I saw several redpolls and bramblings, but did not discover their nests. I found a nest of the fieldfare, and another of the redwing; the eggs of the fieldfare were highly incubated, and those of the redwing still more so, indeed two of them were hatched.

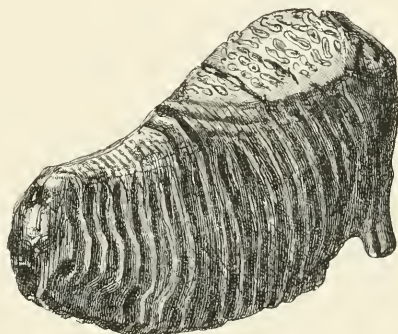
We spent the whole of the following day in getting our stores and baggage comfortably stowed on board the *Ibis*. A smart breeze from the north still blew, keeping us clear of the mosquitoes. The river had fallen so much that the *Thames* lay high and dry on the sand, and we could walk ashore without any difficulty.

The next day the captain mustered his men in the cabin, and had a somewhat unsatisfactory interview with them. I had seen upon my arrival at the Kureika that the captain was not popular with the crew. The British sailor is a peculiar character, for ever exercising the Englishman's favourite privilege of grumbling. Probably Captain Wiggins had been unfortunate in the selection of his scratch crew. So far as I could learn the men had shown jealousy of each other, had taken every possible occasion to grumble at their food, and at their work, but they certainly had laboured in the most spirited way upon the two occasions we had run aground, though now there did not seem to be a man among them who had any pluck left. Right or wrong, they appeared to have lost all faith in their leader. They were in a complete panic at the idea of the captain attempting to go to sea in the *Ibis*. The captain and his men had evidently been at logger-heads some time; to some extent this was the former's fault; he had not sufficient tact. Captain Wiggins was a very agreeable travelling companion, one with whom it

was a pleasure to converse ; he was also a thorough Englishman. With the exception of the Yankee, I suppose John Bull is the 'cutest man in the world, but unfortunately he is too well aware of the fact, and relies implicitly upon his fertility of resource to get safely out of any scrape into which he may fall. He takes little thought for the morrow, but goes on blundering and extricating himself from the effects of his blunders with a perseverance and ingenuity truly wonderful. But all this means hard work for those under his authority. Captain Wiggins had also minor faults which increased his unpopularity ; he was apt to form rash judgments, and consequently was for ever altering his opinions and changing his plans. No one saw this more clearly or criticised it more severely than the crew under him. But the captain had another fault of still deeper dye in the eyes of an English tar—he was a teetotaler and worked his ship upon teetotal principles. In my opinion this was the fountain-head of all his difficulties. After four-and-twenty hours' hard work, a glass of honest grog would, more than anything else in the world, have cheered their drooping spirits, revived their fainting pluck, and cemented the *camaraderie* that ought to subsist between a captain and his men, especially upon expeditions involving such rare difficulties. Nevertheless my sympathies went rather with the captain than with his crew : the latter, when he appeared unjust, should have considered how much allowance ought to be made for a man who had seen his pet schemes frustrated, and his ship lost. The captain was suffering from a kind of monomania—that he had been checkmated by a secret conspiracy, but I could not detect any evidence that such was the case : if it were, then certainly the winds and the waves were among the conspirators.

With all his faults, Captain Wiggins is an Englishman to the backbone, possessing the two qualities by which an Englishman may almost always be recognised, the two marked features of the national character which are constantly showing themselves in English private, social, and commercial life, and most of all in English political and military life. One of these is an unlimited capacity to commit blunders, and the other is indomitable pluck and energy in surmounting them when made.

At length, after much unpleasantness, the last finishing touch was given to the rigging of the *Ibis*, and on Monday the 9th of July we were *en route* for Golchika. We bade adieu to our dogs and foxes and the larger half of the crew, and finally weighed anchor at three in the afternoon, in a stiff gale. Unfortunately the wind was nearly dead ahead, but we had a current of three or four knots in our favour. The *Ibis* sailed far better than we anticipated; in spite of her flat bottom we could sail her pretty near the wind, and we beat down the great river very satisfactorily, leaving Igarka and the ill-fated *Thames* far behind us, and nearing the tundra at the rate of seven or eight versts an hour. Just before we left the scene of our last disaster three swans alighted on the shore, a verst above the ship. I walked up to the spot and took the measure of their footprints on the sand. From the centre of the ball of the heel to the centre of the ball next the claw, the middle toe measured five and



MAMMOTH TOOTH
(Upper view)

a quarter inches. The measurement enabled me confidently to assert that the birds I had seen were Bewick's swans, the footprints left by the wild swan being at least an inch longer. Several gulls passed us ; they had black tips to their wings, and were probably glaucous gulls. I hoped soon to have an opportunity of shooting one.

We passed Plakina in the early morning of the following day, and made good headway with the wind north and north-west until noon. It then dropped almost to a calm, and in the evening we had a breath of air from the south, with a few occasional drops of rain. This weather lasted all night. After leaving Igaka the banks of the river are rather steep, and somewhat thinly clothed with larch, with an undergrowth of coarse grass, except where the innumerable water-channels cut into the soil. The *Ibis* was only drawing about three feet of water, so we had no difficulty with the shoals ; the water also had fallen so much that most of the dangerous sand-banks showed above it, and were easily avoided. We passed very few villages, perhaps one in every three versts ; some of these were very small, consisting of but two or three houses. The population, we were told, decreases every year, in consequence of the rapacity of the Zessedatels, or local governors. Now and then we passed one or two Ostiak chooms ; but this race also is decreasing, and evidently from the same cause. We saw very few birds. Large flocks of black ducks continued to fly northward, and occasionally we saw a few gulls or a pair of swans. In one part of the river we passed what was apparently a sleeping-place for gulls ; the shore was flatter than usual, and there were no trees. About two hundred gulls were assembled, apparently roosting, some down by the water's edge, and others on the grassy banks.

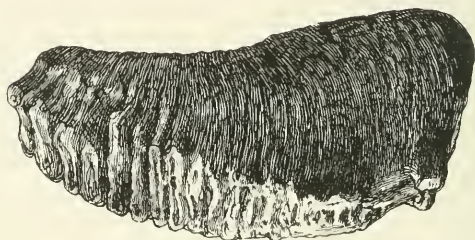
On the 11th we cast anchor at Dudinka at seven

o'clock in the morning, and went on shore to visit the merchant Sotnikoff; as we almost expected, however, we found that he had gone down to Golchika in his steamer, to superintend his fisheries. He had built himself a large new residence, the only good house in the little village. In the winter I had sent Sotnikoff a message, asking him to secure for me complete costumes of the Dolgan men and women who visited Dudinka in the spring to trade. The costumes were waiting for me, and very handsome they were: I paid for them one hundred and forty roubles. I also bought some Yurak and Samoyede costumes. I saw some fine mammoth-tusks and teeth, but the former were too heavy and bulky to take home overland. Sotnikoff's stores contained an almost endless number of furs, but among them were no black fox or sable. The latter animal is now very rare; at one time it was hunted in the forests in winter, the hunter following the tracks in the snow, until he lost them at the foot of a tree; he then surrounded the tree with a net, whose meshes were too small for the sable to pass through, and to which was attached a number of little bells. Lying down within sound of the bells the hunter waited one, two, or three days, until the tinkling warned him that the sable had come out and was entangled in the net. Another mode of securing the animal was to smoke it out of its hole and then to shoot it.

At Dudinka we saw some excellent coal, which burnt as well as any English fuel. It was brought by Sotnikoff from a mine on the tundra, about eighty versts from Dudinka. There was also a quantity of blue and green copper ore from the same place. We understood that this had been analysed, but had not turned out worth working, only containing 5 to 10 per cent. of metal.

Soon after leaving Dudinka the trees became more

scarce upon the banks of the river. The right bank was still steep, and was called the rocky bank ; the left shore was flat, and was called the meadow bank. We passed several islands and sandbanks. On one of the latter we got aground, but by running an anchor out in a boat from the ship we soon hauled her off into deep water.



MAMMOTH TOOTH
(Under view)



SAMOYEDES ERECTING A CHOOM

CHAPTER XXXIX.

FROM DUDINKA TO GOLCHIKA.

The Tundra—The Dried-up Dudinka—Reception by the Birds—Variety of Birds—The Chetta River—Samoyede Chooms—The Broad Nose of Tolstanoss—Second Visit to the Tundra—Asiatic Golden Plover's Nest—A Night on the Tundra—The Dunlin—News of Sideroff's Schooner—Winter in Siberia—The Fishing Station—The King of the Samoyedes—Egg of the Red-breasted Goose—Brekoffsky Island—Eggs of the Mountain Accentor—Various Eggs—Wearied out—Ugliness of the Natives—Land on the Horizon.

WE cast anchor soon after midnight on the 12th of July. I went on shore in the morning to ascertain what birds were to be found on the tundra. We climbed up the steep bank, and found ourselves in a wild-looking country, full of lakes, swamps, and rivers, a dead flat in some places, in others undulating, even hilly. This was the true Siberian tundra, brilliant with flowers, swarming

with mosquitoes, and full of birds. In sheltered places dwarf willows and creeping birch were growing, and (we were only some fifty versts from the forests) here and there a few stunted larches. Winding through the tundra was the track of what had once been the bed of a river, but was now a small deep valley forming a chain of isolated lakes and pools. This river-bed is called the dried-up Dudinka, and is about fifty versts to the north-west of the real river Dudinka. On some of the northern slopes large patches of snow were still lying.

Most of the birds evidently had young. As we approached we each found ourselves the centre of attraction of a little feathered crowd, whose constituents uttered various alarm-notes as they flew round, or waited upon some shrub or plant with bills full of mosquitoes, anxious to feed their young as soon as the coast was clear. I noticed the bluethroat, the red-breasted pipit, the shore-lark, the Little bunting, and great numbers of Lapland buntings, redpolls, and yellow-headed wagtails. A willow-grouse was sitting upon nine eggs. I took a red-necked phalarope's nest with four eggs; a pair of Bewick's swans had evidently a nest somewhere in the neighbourhood; several pairs of golden plover and wood-sandpipers were considerably alarmed at our invasion of their breeding-grounds. The Arctic willow-warbler, the common willow-warbler, and the Siberian chiffchaff were all in full song, and I repeatedly heard the Siberian pipit. Several pairs of fieldfares had nests, and I found one containing young birds. Near the shore a pair of ringed plover and several pairs of Temminck's stints were very demonstrative, but my attention was devoted to more attractive game. Upon a steep sloping bank, covered with patches of dwarf birch and willows, and overlooking a flat willow-swamp close to the shore (which had evidently once

formed a little delta at the mouth of the dried-up Dudinka), a pair of thrushes were loudly proclaiming the vicinity of their nest. I shot one, and found it to be the dusky ouzel, whereupon I commenced a diligent search for the nest. In half an hour I found it, in the fork of a willow, level with the ground. It was exactly like the nest of a fieldfare, lined with dry grass, and it contained, alas! five young birds about a week old. This was very disappointing, as the eggs of this bird were unknown.

On the lakes were several ducks and divers, but they took care to keep out of gunshot. After three hours' stay on land we returned to our ship.

At noon the wind changed to south-east with rain. In the course of the morning we passed the mouth of the Chetta river, said to be the highway to the Ob. In the early summer boats are towed up this river to a lake, whence a short cut across the tundra with reindeer leads to a stream down which the boats can float into the Taz.

During the afternoon we passed four Samoyede chooms. The inhabitants seemed well off; many reindeer sledges were lying round the tents, and five boats were on the shore. Half a dozen of the Samoyedes came alongside of us, wishing to buy tobacco. In several places we saw huge lumps of turf, some more than twenty feet thick, lying on the edge of the tundra like rocks. They must have been floated down in days long past, when the floods rose much higher than they do now, or before the bed of the river had been channelled to its present depth.

In the evening the wind got well back into its old quarter, and it soon blew so stiff a gale that we dared not round the "broad nose" of Tolstanoss, and had to cast anchor under the lee of the mud cliffs of the Yenesei about midnight.

The gale continued next day with rain until noon,

when I took advantage of our enforced delay, and went on shore for a few hours. A climb of about one hundred feet landed me on the tundra. In some places the cliffs were very steep, and were naked mud or clay. In others, the slope was more gradual, and covered with willow and alder bushes. In these trees thrushes were breeding ; I soon found the nest of a dusky ouzel, with five nearly fledged young. It was placed as before in the fork of a willow, level with the ground. On the top of the bank I found myself on the real tundra. Not a trace of a pine-tree was visible, and the birches rarely exceeded twelve inches in height. There was less grass, more moss and lichen, and the ground was covered with patches of yellow mud or clay, in which were a few small stones, that were apparently too barren for even moss or lichen to grow upon. The tundra was hilly, with lakes, swamps, and bogs in the wide valleys and plains. As soon as I reached the flat bogs I heard the plaintive cry of a plover, and presently caught sight of two birds. The male was very conspicuous, but all my attempts to follow the female with my glass, in order to trace her to the nest, proved ineffectual ; she was too nearly the colour of the ground, and the herbage was too high. Feeling convinced that I was within thirty paces of the nest, I shot the male, and commenced a diligent search. The bird proved to be the Asiatic golden plover, with grey axillaries, and I determined to devote at least an hour looking for the nest. By a wonderful piece of good fortune I found it, with four eggs, in less than five minutes. It was merely a hollow in the ground upon a piece of turfy land, overgrown with moss and lichen, and was lined with broken stalks of reindeer-moss. The eggs more resembled those of the golden than those of the grey plover, but were smaller than either. These are the only authenticated

eggs of this species known in collections. I saw a small hawk like a merlin, a pair of Siberian herring-gulls that evidently had a nest in the neighbourhood, a number of shore-larks and Lapland buntings, a few red-throated pipits, and some redpolls.

I went on board again in the afternoon. The gale still continued, and squalls of rain frequently passed over us. The captain decided that we must continue to lie at anchor for the night, so I challenged one of the sailors named Bill to spend the night with me on shore. We had no sooner landed than a couple of peregrine falcons revealed their nest to us by their loud cries. At a glance up the cliffs we decided the place where it must be, at the top of a steep mud promontory which stretched out to a sharp ridge beyond and above the surrounding coast. I climbed up a valley in which the snow was still lying, and came straight along the ridge to the little hollow where four red eggs were lying on a dozen small flakes of down. Bill shot the female, but she fell amongst the willow and alder bushes, and though we spent an hour in the search we did not succeed in finding her. The time was not, however, wasted. Whilst searching for the fallen peregrine we started a Siberian chiffchaff from an alder bush, and had the good fortune to secure her nest with four eggs. It was placed in the branches about four feet from the ground, and was rather more carefully constructed than the one I had previously found. It was composed of dry grass, semi-domed, and lined with willow-grouse feathers. The eggs were white, spotted with dark purple, and large for the size of the bird. The Siberian chiffchaff is evidently a much later breeder than the willow-warbler, which is somewhat singular, as both birds arrived together from the south. Our willow-warbler was still there, but not common.

On the plains we passed many pairs of Asiatic golden plover, but as I had already secured their eggs we passed across the tundra to some lakes in the distance, hoping to find something new. In a marsh adjoining one of the lakes I shot a dunlin, the first I had seen in the valley of the Yenesei. A few hours later I shot a second, and secured its young in down. The old bird was in full moult. On the lake two ducks were swimming; Bill took them both at one shot. They proved to be two female long-tailed ducks, also a new species for my list. On a bare hill overlooking the second lake I shot a pair of Arctic terns, and soon after found their nest, containing one egg and two young in down. On a similar bare place a pair of ringed plover were very demonstrative, but we took no trouble to seek for their nest. We caught several young Lapland buntings, and shot a shore-lark in the spotted plumage of the first autumn.

Before we returned to the ship the gale had subsided, and we hastened back to the shore. Coming down the bank I found a fieldfare's nest on the ground under the edge of the cliff. It contained five young birds nearly fledged. I shot the female, expecting to find one of the rarer Siberian thrushes.

As soon as we got on board, at two o'clock in the morning, the anchor was weighed, and we proceeded with a gentle breeze from the land. In the afternoon we picked up Schwanenberg's two mates in an open boat; they were on the look-out for us, and from them we learned the fate of Sideroff's schooner. The little river in which she was anchored had steep banks, between which the snow drifted to the depth of twenty feet. All the sailors died of scurvy except the mate. Early in April the pressure of the snow above, and some movement possibly in the ice below, caused the vessel to

spring a leak, and she rapidly filled to the depth of six feet. The island where she was lying is called Mala Brekoffsky, and is said to be in lat. $70^{\circ} 35'$ N., and in long. $82^{\circ} 36'$ E. From the mate, who wintered there, I learned the following particulars. From November 22nd to January 19th the sun never rose above the horizon. On May 15th it ceased to set. On May 29th the first geese appeared: the only birds seen during the winter being willow-grouse and snowy owls. On June 15th the first rain fell; on the 16th the first thunderstorm; on the 18th the ice broke up, and was all gone in five days. The river rose higher, they said, than it had been known to rise for seventeen years, the whole of the island, twenty versts long, being flooded. One house was carried away, and the other two were saved by the men standing on the roofs and staving off the floating ice with poles. The water came within a foot of the top of the roofs. The schooner was carried bodily away, and at the date of our visit lay high and dry a couple of versts lower down, with a large hole in her side, a more hopeless wreck than the *Thames*. The latter vessel lay near the mouth of a small but deep river, into which—in the opinion of Boiling and some others—there was a fair chance she might be floated the following year between the rising of the water and the breaking up of the ice.

In the evening we sailed through a very narrow channel into the little creek where the fishing station was established. In various places round the creek stood the chooms of the Yuraks. Opposite each choom three or four boats lay on the muddy beach, the fishing nets hanging on rails and stages to dry. At the entrance to a narrow channel like a river—but which was really an arm of the great river coming to an abrupt termination—about a verst inland, were the headquarters of Sotnikoff's

agent at that station. This was the busiest place we had yet seen on the river ; it contained three or four wooden houses, a couple of chooms, and a yurt. The latter was a turf and mud house, nearly square, built half under the ground and half above it, a few larch-poles as rafters supporting the turf roof, altogether making probably as good a house for the summer as one could have in this part of the world. When the cold north wind blows the house may easily be kept warm with a small fire ; and in the burning heat of the sun it forms a cool retreat, easily cleared of mosquitoes by smoke. A small steamer lay at the mouth of the *kuria*, as these arms of the river are called ; along with her lay a barge, and in various places Russian lodkas and Samoyede canoes were moored. On land fishing-nets were piled in every stage of wetness, dryness, fulness, and emptiness ; fish was being salted, casks were being filled or packed in the barge. Some hundreds of white-fox skins were hanging up to dry, and men of various nationalities were going to and fro. The more information I tried to obtain about these eastern tribes, the more puzzled I became. I was presented to a Samoyede of the name of Patshka, called the King of the Samoyedes. When I asked him if he were a Samoyede he gave me a very hesitating affirmative, but freely admitted that he was Yurak. He emphatically denied that he was Ostiak, Tungusk, or Dolgan. The natives did not seem to recognise the word Samoyede, except perhaps as a Russian term for an Asiatic. One told me he was a Hantaiski, another that he was Bergovoi, another that he was Karasinski, whilst a fourth called himself an Avamski. The only conclusion I could come to was that they were all Yuraks, and that the names by which they called themselves referred to their respective districts.

Before anchoring in this creek, we ran aground and were an hour or two endeavouring to get the vessel free, being obliged to send two anchors off in order to get her afloat. I went on shore about midnight. When Schwanenberg's second mate left the *Kureika* I had commissioned him to procure for me what eggs he could before my arrival, and in each case to shoot the bird if possible. He and the first mate had accordingly lost no opportunity of collecting whatever eggs they could find. This collection, small as it was, proved of great value, for I had arrived at my destination too late for most eggs. A very interesting egg was that of the red-breasted goose, which the first mate found on the adjacent island. There were two eggs in the nest, but, shooting the bird while she was sitting, he unfortunately broke one egg.

On Sunday I spent twenty hours out of the twenty-four in exploring the island. As far as I was able to penetrate, it was all swamps and lakes, with a few dwarf willows dotting it in clumps here and there. Three weeks earlier the whole island had been eight feet under water; it was now about fourteen feet above the level of the Yenesei, so that the river must have fallen about twenty-two feet. The place abounded with birds, but the number of species was small. The commonest was the yellow-headed wagtail. What interested me most in the small collection of eggs which the two mates had procured for me were five sittings of the eggs of the mountain accentor, which were up to that time unknown in collections. These eggs are blue and unspotted, and resemble very closely those of our hedge-sparrow. The mate took me to a nest in which were young birds. It was close to the ground in a dwarf willow-bush. The next commonest bird was the Lapland bunting, but there was no evidence of their breeding, though they had

already-fledged young on the tundra. I concluded that their nests had been swept away by the flood, and that they had not bred a second time. Temminck's stints were extremely abundant; amongst the mate's collection of eggs were thirty-three of this bird. He had also secured for me some of the red-necked phalarope, and of the ruff, which were not uncommon here. The only warbler I saw on the island was the Siberian chiffchaff. This bird was always to be heard, and frequently to be seen. I took two of its nests, with eggs still unhatched in them, and received twenty-five of its eggs from the mate. The nests were on or only just above the ground. I saw a few pairs of red-throated pipit, and took one of their nests with five eggs, and got a second sitting from the mate. In both cases the eggs were variable in colour, forming a graduated series from dark brown to stone colour. Occasionally I heard the Siberian pipit, and I got a sitting of eggs from my deputy collector which could belong to no other bird which I saw on the island. Redpolls were not uncommon, and the mate told me this was the earliest bird to breed. Most of its eggs in his collection were taken before the river rose. He took a few nests of a thrush. The eggs were apparently those of the redwing. I saw a pair of thrushes, but failed to shoot either of them. A pair of white wagtails built their nest on the wreck of Schwanenberg's schooner. The mate saved the eggs for me. I took a teal's nest with eggs, and occasionally saw long-tailed ducks flying past. The mate secured me three swan's eggs, birds which were constantly to be seen. So far as I yet know, Bewick's swan is the only species found at this place. The Siberian herring-gull and the Arctic tern were generally to be seen, and the same hand secured me eggs of both. Occasionally a pair of Buffon's skuas flew over.

The following day, another twenty hours' hard work well-nigh exhausted the ornithology and ethnology of the Mala Brekoffsky ostroff. I was footsore with all this walking in swamps, and positively worried by mosquitoes. I think nothing short of the certainty of coming upon a curlew sandpiper's egg would have tempted me on shore again that day. The natives are very ugly, not copper-brown like the Dolgans, nor yellow like the Ostiaks, but almost as cadaverous-looking as corpses. The extreme



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irregularity of their features and the dirt of their dress add to their repulsiveness. I got a curious leaden pipe from a Yurak, and the mate gave me an interesting iron pipe, made by a Tungusk, which he had got at Dudinka.

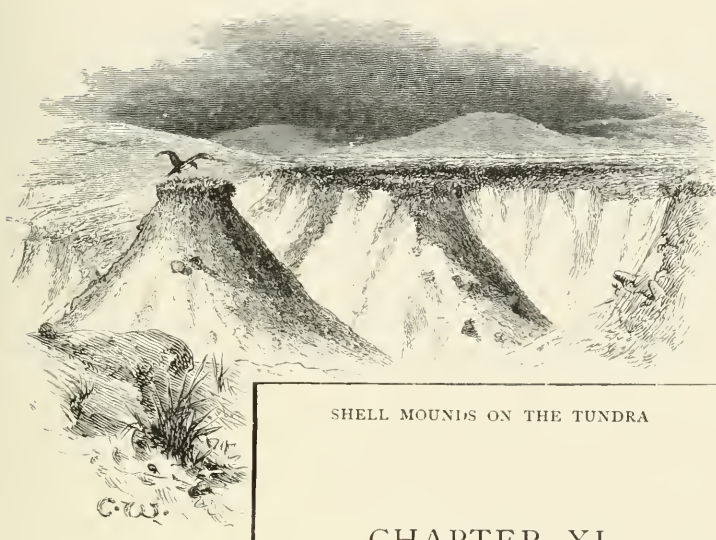
In the evening we weighed anchor, delighted to leave the mosquitoes, but at midnight we were obliged to cast anchor again and send a boat out to find water to float a ship drawing three feet! We seemed to be out in the open sea but we were, in fact, in a nest of shoals. At last we found a passage out, in one to one and a quarter fathoms, and got on fairly with a head wind and a slight current as day came on.

At noon the next day there was land to starboard; high bold cliffs, composed no doubt of turf and mud, extending ninety degrees on the horizon. All the rest was open water. In the afternoon two herds of *beluga* or white whale passed close to the ship. Towards evening we saw a strip of land at a great distance on the port side of the vessel. At night we made scarcely any progress, being almost becalmed, and the river so broad that the current was scarcely perceptible.

During the next morning the wind freshened a little; the channel narrowed to perhaps six miles, which helped the current, and at noon we cast anchor at Golchika, close to three steamers and sundry barges.



OLD RUSSIAN SILVER CROSS



SHELL MOUNDS ON THE TUNDRA

CHAPTER XL.

GOLCHIKA.

Golchika—Blowing Eggs—Drift-wood on the Swamp—The Little Stint—Rock Ptarmigan—I secure a Passage to Yeneseisk—Fighting over the *Ibis*—Buffon's Skuas—Shell-Mounds—The Captains come to Terms—Sandbanks at the Mouth of the Golchika—Farewell to the Tundra.

THE village of Golchika is on an island between the two mouths of the river of the same name ; across both these arms stretches a swamp, and beyond the swamps rise the steep banks of the tundra. In summer Golchika is a busy place ; all the processes of catching, salting, and storing fish go on during a long day of twenty-four hours. The sun having ceased to rise and set, the ordinary divisions of time are ignored. If you ask a man what time it is, he will most probably tell you he has not the slightest idea. Order seems for the nonce forgotten, and people sleep and eat when inclination bids them.

Immediately after casting anchor, we took one of the boats and paid visits of ceremony to the Russian steamers. Boiling and I had arranged to spend the

night on the tundra ; but we had no sooner returned to the *Ibis* to dine than the wind, which had been freshening all the afternoon, blew such a gale that it became impossible to land with safety. The gale continued all night, accompanied by heavy showers of rain, nor did it decrease sufficiently during the next day to allow us to venture on shore in a boat. Fortunately I had on board a box of eggs, collected for me by a Samoyede, the blowing of which kept me employed. Several had been taken from the nest two or three weeks before our arrival, and were becoming rotten. The larger number were those of gulls and divers ; there were some small eggs which were unquestionably those of the snow-bunting, and there were twenty or thirty of the sand-pipers, but none that were strange to me. There was a sitting of red-necked phalarope, and some eggs which I identified as those of the Little stint. There were also two sittings of golden plover, and one of the Asiatic golden plover.

The wind having somewhat subsided during the night, Glinski, Bill, and I started at four o'clock in the morning for the tundra. We first had to cross the swamps, which we did without difficulty, in no place sinking more than a foot below the surface, at that depth the ground probably remaining frozen. One corner of the marsh was still bounded by a small range of ice mountains, miniature Alps, perhaps thirty feet high at their greatest elevation. This ice probably survives the summer ; it had, of course, been piled up when the floes passed down the river. All over the swamp drift-wood lay scattered—old, weather-beaten, moss-grown, and rotten. The marshy ground was only a few inches above the level of the sea, but immediately after the thaw it had been, we were informed, some feet under water.

Birds were abundant. Golden plover, Arctic tern, ruffs, red-necked phalarope, snow-bunting, Lapland bunting, and dunlin were continually in sight, and I shot a couple of female Little stints, the first I had seen in the valley of the Yenesei. On the tundra, the commonest bird was the Asiatic golden plover. They were breeding in every spot that we visited. My attempts to watch them on to the nests were vain, but from their behaviour I came to the conclusion that they had young. Just as we were leaving the swamp we picked up a young plover not many days old. The European golden plover was very rare, and we only shot one brace. The note of the Asiatic golden plover is very similar to that of the grey plover. Its commonest note is a plaintive *kö*. Occasionally the double note *klē-ē* is heard, but oftener the triple note *kl-cē kö* is uttered. Ringed plover were plentiful on the barer places on the tundra. Wagtails seemed entirely to have disappeared; the redpoll and the red-throated pipit were still found, but were not abundant. In the small valleys running up into the tundra we frequently saw willow-grouse, and on the high ground I shot some rock ptarmigan (*Lagopus rupestris*). In some of these valleys the snow was still lying; flowers were very brilliant; but we did not come upon any shrubs more than a foot high. Occasionally gulls, divers, and swans flew past us overhead, but I did not see any skuas on this part of the tundra until later. On the 21st of July I moved all my luggage from the *Ibis* to the steamer belonging to Kittman and Co., where I engaged a passage to Yeneseisk. I secured a small cabin next the paddle-box, just large enough for myself and Glinski to work in. For this I paid twenty-five roubles. My large casks were on the barge, at a freight of sixty kopecks a pood, and we were each charged sixty kopecks

a day for our meals, besides having to provide for ourselves tea, coffee, sugar, and spirits. In the afternoon I explored the island. It seemed to be about a square mile in extent, very swampy, and thinly sprinkled with rotten driftwood. I shot Arctic terns, red-throated pipit, Lapland and snow-buntings, and Temminck's stint, and saw red-necked phalaropes, and a long-tailed duck. As I was leaving a boat passed, towing a couple of white whales; one was about six feet long and the other nine or ten feet. Before I left the men were already beginning to cut off the skin and blubber into strips: the skin seemed to me half an inch and the blubber about two inches in average thickness; the former makes the strongest leather known. Captain Wiggins told me it fetched a rouble per lb. in St. Peterburg, where it is largely used for reins and traces.

On my return I found the captain and Schwanenberg fighting over the *Ibis*. I had offered to take six hundred roubles in a bill upon Sideroff for my half from Schwanenberg, or an I. O. U. for 500 roubles from Wiggins. Schwanenberg wanted to go in her to St. Petersburg, Wiggins wanted to go in her to the Ob. Schwanenberg's crew were on excellent terms with their captain, and were willing to risk their lives for, and with him. Wiggins, on the other hand, was at loggerheads with his men, who point-blank refused to go. It was a very unpleasant position for the captain, but, to a certain extent, he had himself to blame. He had unfortunately not taken the right course to gain the affection of his sailors; and, considering the feeling existing between them, it seemed to me unreasonable to expect the men to follow him into further risks, which were never contemplated when they were first engaged. The captain was evidently trying all he could to discover some combination

by which he might be saved the humiliation of finding means for a rival to do that which he had failed to do himself. In the meantime, Schwanenberg was in much suspense, fearing the boat would slip through his fingers. Both parties consulted me ; I tried to give them good advice, wishing heartily the matter could be settled one way or the other. To attempt to cross the Kara Sea in a cockleshell like the *Ibis* was a foolhardy enterprise, and could only succeed by a fluke, but both captains were anxious to risk their lives in the desperate attempt. Ambition and enthusiasm seemed for the moment to have deprived them of common sense.

Boiling and I had a long round on the tundra. The next day we saw a few pairs of European, and a great many pairs of Asiatic, golden plover. I spent nearly two hours over a pair of the latter bird, trying to watch the female to the nest. She ran backwards and forwards over one piece of ground for half an hour, then flew to another place, and went through the same performance. The only conclusion I could come to was that she had young, and thus sought to protect first one and then another. The male remained for a long time in one place. His object seemed to be to watch me, and to give the alarm to the female should I move.

Had I been a fortnight earlier I should no doubt have obtained many of their eggs. I had had to pay dearly for Captain Wiggins' blunders, but I could not desert him in his misfortune. I had put upon him as much pressure as I possibly could without quarrelling with him, to induce him to finish the rigging of the *Ibis*, and to let Boiling and myself proceed alone according to our original plan.

We found the ringed plover very common on the bare places on the hills as far as we penetrated the tundra.

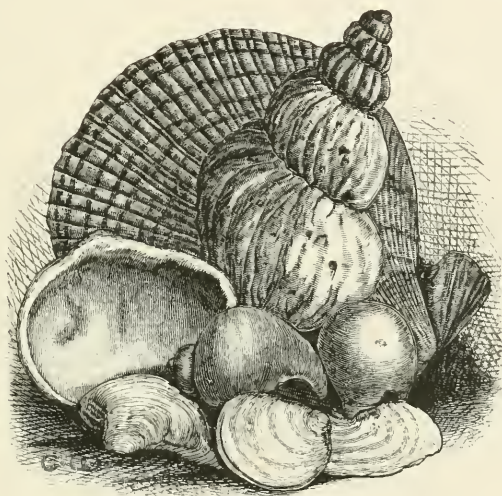
Near the river Golchika I shot two reeves, and on the hills I shot a male Little stint. On the same bare places which the ringed plover frequented, I occasionally came upon a pair of wheatears. Redpolls, Lapland buntings, red-throated pipits, and shore-larks were common, and were evidently feeding their young. On the banks of the Golchika I saw a solitary white wagtail, and sometimes a red-necked phalarope or a Temminck's stint. That day a party of seven or eight Buffon's skuas flew over our heads, out of gunshot. This was the only occasion upon which I saw the "chorna chaika" at Golchika. One of the most interesting discoveries we made on this trip was that of a number of hills of shells on the tundra, at least 500 feet above the level of the sea.* Some of these beds of shells were on the slopes of the hills, others were conical elevations of sand, gravel, and shell. These latter were from ten to twenty feet high, with a little turf and vegetation on the top; the sides were as steep as the loose materials of which they were composed would allow. I picked up four or five different species of shells in a nearly perfect condition, but by far the greater number were broken into small pieces, and bleached white. The soil in the neighbourhood of these hills, whenever it was bared from its covering of turf, seemed to be a bluish, sandy clay.

In the evening the two captains came on board, and I acted as mediator. I tried all I could to bring matters

* A series of these shells was submitted to my friend Captain H. W. Feilden, who, with the aid of Mr. Edgar A. Smith, determined them to be of the following species:

MOLLUSCA: *Pecten islandicus*, *Astarte borealis*, *Natica affinis*, *Saxicava arctica*, *Fusus (Neptunca) kroyeri*, *Fusus (Neptunca) despectus*. CIRRIPIEDIA: *Balanus porcatus*. All the species here represented, although obtained at so great an elevation, are now existing and common in the neighbouring seas. This can only be accounted for by the supposition of a recent rising of the land or subsidence of the sea in these regions.

to a conclusion without a final rupture. After some sparring I at last succeeded in bringing the two impracticable men to a mutual understanding on the following terms. Wiggins retained his anchors and cables, his spare sails and blocks, his stores and provisions, and Schwanenberg paid him in cash four hundred roubles, and, in a bill upon Sideroff, three hundred roubles more, whilst I took Schwanenberg's draft upon Sideroff for six



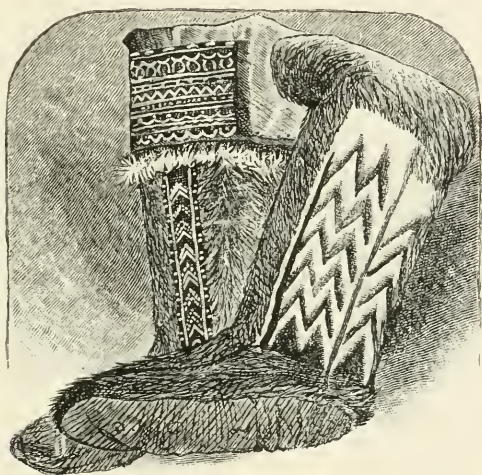
SHELLS AT GOLCHIKA

hundred roubles. If it had not been for Wiggins' impracticability we might have had fifteen hundred roubles for the ship at Brekoffsky, with Schwanenberg's thanks and gratitude into the bargain, but after all it did not make much difference in the long run. Wiggins had the good luck to meet Sideroff and obtain his endorsement; nevertheless the bill was not paid until Wiggins had prosecuted him from court to court, and at last got a final verdict in his favour, and an execution. As my bill was only accepted "per pro," my lawyer in St.

Petersburg advised me not to throw good money after bad, and it remains unpaid to this day. I was delighted when the affair was at last settled, and the Russians could no longer accuse us of acting in a dog-in-the-manger fashion. Sotnikoff's steamer left that evening with the two captains and the *Ibis*, and, what was much more to the point, he was accompanied by the voracious Zessedatel. I paid my P.P.C. visit to him, received the Zessedatel's official kiss, and got off cheaply by giving him ten roubles for a wolf's skin worth half that sum.

When we rose the next morning we found that Ballandine's steamer had sailed during the night, leaving us with the last steamer at Golchika. We were told to hold ourselves in readiness to start the first moment the water rose high enough to float us, but we did not weigh anchor until the afternoon, and the evening was spent in getting on and off the shoals at the mouth of the Golchika river. We did not get clear of the sandbanks until four o'clock in the afternoon of the next day, nor should we have done so then had not a smart breeze from the north-west backed up the waters of the Yenesei, and raised us from two to three feet. The harbour of Golchika will shortly have to be abandoned, for the sandbanks at the mouth of the river increase every year. The channel through them is tortuous, and is rapidly becoming more shallow. No ships drawing more than five feet of water ought to venture near it, and then they should only enter it with great care and vigilance. When the ice thaws in spring, the water rises three or four feet. The year of our visit it had risen more, and stood three feet deep in the houses; but this was an extraordinary occurrence, and, we were told, had never happened before during the ten years that steamers had been in the habit of visiting Golchika.

My stay in the most northerly village of the Yenesei lasted only six days. The weather being cold and windy I had almost forgotten the existence of mosquitoes. I now bade adieu to the tundra, with a feeling somewhat akin to disappointment and regret. My trip might be considered almost a failure, since I had not succeeded in obtaining eggs either of the knot, sanderling, or curlew sandpiper. Nevertheless I was glad to turn my face homewards.



DOLGAN AND SAMOYEDE BOOTS



OSTIAK BOATS

CHAPTER XLI.

MIGRATION.

Climate of the Tundra—Break up of the Ice—Migration of Birds in the South of France—Comparison between Island and Continental Migration—Routes of Migration—Grouse—Conservatism of Birds—Mortality amongst Migrants—Origin of Migration—Glacial Epochs—Emigration of Birds—Geographical Distribution of Thrushes—Reports on the Migration of Birds.

THE history of animal and vegetable life on the tundra is a very curious one. For eight months out of the twelve every trace of vegetable life is completely hidden under a blanket six feet thick of snow, which effectually covers every plant and bush—trees there are none to hide. During at least six months of this time animal life is only traceable by the footprints of a reindeer or a fox on the snow, or by the occasional appearance of a raven or a snowy owl, wandering above the limits of

forest growth, whither it has retired for the winter. For two months in midwinter the sun never rises above the horizon, and the white snow reflects only the fitful light of the moon, the stars, or the aurora borealis. Early in February the sun just peeps upon the scene for a few minutes at noon and then retires. Day by day he prolongs his visit more and more, until February, March, April, and May have passed, and continuous night has become continuous day. Early in June the sun only just touches the horizon at midnight, but does not set any more for some time. At midday the sun's rays are hot enough to blister the skin, but they glance harmless from the snow, and for a few days you have the anomaly of unbroken day in midwinter.

Then comes the south wind, and often rain, and the great event of the year takes place—the ice on the great rivers breaks up, and the blanket of snow melts away. The black earth absorbs the heat of the never-setting sun; quietly but swiftly vegetable life awakes from its long sleep, and for three months a hot summer produces a brilliant alpine flora, like an English flower-garden run wild, and a profusion of alpine fruit, diversified only by storms from the north, which sometimes for a day or two bring cold and rain down from the Arctic ice.

But early in August the sun begins to dip for a few moments below the horizon, and every succeeding midnight sees him hide longer and longer, until, in September, the nights are cold, the frost kills vegetation, and early in October winter has set in and snow has fallen, not to melt again for eight months. The nights get longer and longer, until towards the end of November the sun has ceased to take its midday peep at the endless fields of snow, and the two months' night and silence reign supreme.

But wonderful as is the transformation in the aspect of the vegetable world in these regions, the change in animal life is far more sudden and more striking. The breaking up of the ice on the great rivers is, of course, the sensational event of the season. It is probably the grandest exhibition of stupendous power to be seen in the world. Storms at sea and hurricanes on land are grand enough in their way, but the power displayed seems to be an angry power, which has to work itself into a passion to display its greatness. The silent upheaval of a gigantic river four miles wide, and the smash-up of the six-foot-thick ice upon it, at the rate of twenty square miles an hour, is to my mind a more majestic display of power; but for all that the arrival of migratory birds, so suddenly and in such countless number, appeals more forcibly to the imagination, perhaps because it is more mysterious.

In Part I. of this volume I have attempted to give the reader what information I could upon this interesting subject. My facts were principally derived from personal observation of the migration of birds on Heligoland, so that the subject was treated from an island point of view. But since those lines were written I have had an opportunity of seeing something of migration in the south of France, both in autumn and spring, and the study of the subject from a continental point of view has caused me to modify some of the views expressed in the former chapter on migration.

When we left England in the middle of October, 1881, the swallows had disappeared, but we found a few stragglers still basking in the sun at Arcachon. The window of our hotel looked over the *bassin* on to the Île des Oiseaux, and as we stood on the balcony we could see an almost constant stream of migration going

on. Large flocks of skylarks passed every few minutes, warbling to each other as they flew, and smaller flocks of meadow pipits were almost as frequent. Now and then we saw flocks of dunlins and a larger species of sandpiper which looked like redshanks, and once a party of thirty to forty cranes passed over, forming a line like the letter V. Flocks of ducks—perhaps more correctly described as clouds of ducks, so numerous were these birds—continued to pass southwards until the middle of November. In many places the farmers had put down flap-nets to catch the smaller species, which were decoyed into them by call-birds, and during the whole period of migration birds of all kinds were brought every day to the market.

In early spring we were at Biarritz, and here again we found migration going on apace; but the tide had turned, and the birds were all going north. Early in March small parties of skylarks, woodlarks, pied wagtails, white wagtails, meadow pipits, and other birds were constantly passing in succession, but only within a mile or two of the coast.

On the 11th of March we ascended La Rhune, an outlying mountain of the Pyrenees. Just as we reached the *col* between the two peaks, we witnessed a most interesting little episode of migration. A flock of birds came up from the Spanish side, and passing over our heads continued their northerly course. This flock consisted of eight kites, a crane, and a peregrine falcon. It was a curious assemblage, and we watched them through our binoculars with great interest.

All through the winter we found the chiffchaff very common at Pau, but it never uttered its familiar note. When we reached Biarritz it was equally common, and quite as silent; but on the 9th of March it began to chiffchaff lustily. On the 15th willow-warblers arrived in

considerable numbers, and were soon in full song. Newly arrived parties were always silent, and sometimes the hedges quite swarmed with these pretty little birds, apparently tired and hungry after their migration, anxiously searching the bushes for food, and very frequently taking a short flight into the air to capture a gnat upon the wing.

The marked difference between migration at Heligoland and migration on the shores of the Bay of Biscay is, that at the former locality not a bird was to be seen in unfavourable weather, but that when the wind was propitious birds came over with a rush, whilst at the latter post of observation a gentle stream of migration seemed always to be going on, in almost all weathers, from early morn to late at night. The natural inference from such observations is, that in the middle of a long land-journey they simply travel slower in unfavourable weather, and rest at night; but when a sea-journey has to be made, they wait for favourable wind and weather, and consequently it often happens that, when the right time comes, a crowd of birds has accumulated, which comes over *en masse*, with what ornithologists call a "rush."

Another result of my Bay of Biscay experience is, that I must revoke my suggestions that too much has been made of the great lines or routes of migration.* I made many excursions inland, both from Arcachon and from Biarritz, but a very few miles from the coast took me out of the range of migration. On the west coast of France, both in spring and autumn, birds appeared to me to migrate low, principally by day, and to follow the coast-line. I am inclined to think that I must also recall the doubts, formerly expressed, that birds follow ancient coast-lines. The migration from the south of Denmark over Heligoland to the coast of Lincolnshire seems to corre-

* See p. 195 in Part I.

spond so exactly with what geologists tell us must have been the old coast-line, that it is difficult to believe it to be only a coincidence. If we admit the theory that migration became a fixed habit during the glacial period, we must also admit that the difficulty of proving that the old coast-line disappeared after the formation of the instinct, is removed. The fact that the British red grouse is entirely confined to our islands and is replaced by a very nearly-allied, but perfectly distinct species on the continent—the willow-grouse, seems to prove that in all probability, after the extermination of bird-life from the corner of Europe now occupied by Great Britain, by the ice of the glacial epoch, it was again re-peopled with grouse from the mainland. During the warm period which followed the glacial epoch, we may fairly assume that the absence of the present ice at the North Pole, and the presence of an additional amount of ice at the South Pole, might so alter the centre of gravity of the earth as to leave the shallow portion of the German Ocean dry land, and then the grouse might again find a home in England without difficulty. It is obvious, however, that whether the land-connection between England and the Continent were formed by a difference in the level of the water, or whether it were formed by a greater former elevation of a part of the bed of the German Ocean, the severance of Britain from the continent of Europe must have taken place sufficiently long ago to allow for the differentiation of the two species which has subsequently taken place. The reader may perhaps be inclined to think that it is quite unnecessary to assume any such land-connection in order to account for the existence of grouse on our island. The grouse is a bird, and can fly, and pretty quickly too, as any one who has shivered behind a butt in the inglorious sport of grouse-driving knows. Why cannot the ancestors

of our grouse have flown across the Channel? The answer to this supposed doubt on the part of the reader for the necessity of the assumption of a former land-connection is, that there is no instance on record of a red grouse having been captured on the continent, or of a willow-grouse having ever strayed to our islands ; and it is a well-known ornithological fact that in a great many instances a very narrow channel of deep sea bounds the geographical range of birds. Migration across the sea seems to take place only where it has become a fixed habit, formed ages ago. Birds are very conservative. To an immense extent they do as their forefathers did. One cannot expect a very high development of the reasoning faculty in them. The lower the power of the reason the greater is the blind force of hereditary instinct. Like other conservatives, birds have to suffer the penalties of not being able to adapt themselves to the changed circumstances of the times. There can be no doubt that thousands of birds perish in their attempt to follow the old routes which their ancestors took. I have been assured repeatedly by naval officers that they have seen many instances of flocks of birds being drowned at sea, and I have myself picked up birds that have been washed ashore after a storm.

The origin of migration probably does not date back to a period before the glacial epoch. As birds gradually began to increase and multiply to an extent sufficient to produce a struggle for existence, in the form of a fight for food, they seem to have adopted a custom, which they still retain, of leading away or driving away their families every autumn to seek food and a home elsewhere. As the circle of bird-life constantly widened, in due time the abundance of food tempted many birds to stray into the Arctic regions, to breed during the long

summer of those climates at that period. Probably during the darkest months of midwinter, if the cool season of the pre-glacial period may be called winter, some local migrations took place, and birds wandered back again for a month or two into the adjoining districts, but these little journeys can scarcely be dignified with the name of migration.

In process of time, however, the temperature of the earth appears to have cooled to such an extent that as each pole came to be in aphelion during winter, the winter became so severe that those birds who did not learn to migrate to southern climes perished for lack of food during the cold season. These periods of severe winters lasted for 10,500 years, and were followed by similar periods of mild winters when the cold was transferred to the opposite pole, the complete revolution of the precession of the equinoxes taking about 21,000 years. Then came the glacial period, a period supposed to have lasted 120,000 years, when the relative positions of the various planets in the solar system so increased the eccentricity of the earth's orbit, and so exaggerated the severity of the winters, that in consequence of the effects of cold being cumulative (ice and snow not running away as water does) the severity of the winter became at length so great that summer was unable to melt the whole of the previous winter's snow and ice. A permanent glacier having once been formed at the North Pole, and having once bridged over the Arctic Ocean to the continent, would rapidly increase so long as the cause of its existence continued; and the evidence of geology goes far to prove that, at the height of the glacial epoch, the field of ice measured five or six thousand miles across. As this immense glacier marched southwards the palæarctic birds were driven before it, and whilst most of them still came annually to

breed in the semi-arctic climate which hung around its skirts, all had to winter as best they could in the already overcrowded Indian and Ethiopian regions, and a few species seem to have made, not simple migrations for a season, but absolute emigrations for good and all into distant lands, and thus their descendants have become almost cosmopolitan. The migration or irruption of sand-grouse in 1863 was probably an emigration of this nature.

It must have been a curious state of things in south Europe at this time, when reindeer were destroyed by tigers within sight of a glacier such as now exists at the South Pole.

After the glacial period had passed its meridian, and the edge of the ice gradually retreated northwards, carrying its climate, its swamps, and its mosquitoes with it, the great body of the palæarctic birds followed it, returning every summer farther and farther north to breed. Here and there a colony was left behind, and formed the tropical allies of so many of our species—birds which no longer migrate, but which have the powers of flight, the pointed wings of their ancestors, though they no longer require them.

The extraordinary emigration of sand-grouse alluded to is doubtless only one of many such great movements which have from time to time taken place. The disturbance of bird-life produced by the temporary extermination of it in the northern half of the palæarctic region during the glacial epoch must have been very great. The countries to the south of the great glacier must have been overcrowded, and the natural cure for such a state of things must have been emigration on a large scale. It is not difficult to trace some of these movements even after such a lapse of time. Their history is written indelibly

on some of the palæarctic genera. The reader may be interested in hearing upon what data such theories are based. Let us select the Thrushes as an example. They are almost cosmopolitan. They are found on all the great continents, on many of the Pacific Islands, and almost all over the world except in New Zealand, Western Australia, part of New Guinea, and Madagascar, and we must remember that these countries are by no means fully explored yet. But in spite of their near approach to being cosmopolitan, they belong to a palæarctic genus or genera. A large proportion of their nearest allies are palæarctic, and the formation of their wings—flat, long, pointed, and with the first primary very small—is such as is principally found in palæarctic birds who acquired wings capable of powerful flight to enable them to migrate during the glacial epoch. Before this time we may assume that the Thrushes were residents in Europe and North Asia.

The Thrushes are divisible into three tolerably well-defined genera. The genus *Geocichla*, or Ground-Thrushes, contains about forty species. The genus *Turdus*, or true Thrushes, contains about fifty species, and the genus *Merula*, or Ouzels, contains rather more, about fifty-three. Zoologists have come to the conclusion that the history of the individual is more or less an epitome of the history of the species. Now the young in first plumage of all thrushes have spotted backs, but the only thrushes which retain this peculiarity through life are to be found in the genus *Geocichla*; and we therefore assume that the ground-thrushes are the least changed descendants of their pre-glacial ancestors. In fact we come to the conclusion that before the glacial period there were no true thrushes and no ouzels, and that the ground-thrushes inhabited Europe and North

Asia, whence they were gradually driven south as the polar ice extended its area. The European ground-thrushes took refuge in Africa, and overspread that continent. A small part of them remained ground-thrushes, and their descendants now form the African species of the genus *Geocichla*. But by far the larger portion developed into true thrushes, some of whom permanently settled in Africa, whilst others crossed the then warm South Pole and spread over South America, some even emigrating as far as Central America and South Mexico. We thus find that the true thrushes of the Ethiopian and the Nearctic regions are very closely allied, and have by some writers been separated from the genus *Turdus*, and associated together under the name of *Planesticus*. During the warm period at the North Pole which followed the glacial epoch, the true thrushes of North Africa appear to have followed the retreating ice, and to have spread over Europe, penetrating eastwards into Turkestan and Kashmir, and northwards across the pole into North America as far south as Mexico.

In Asia a similar emigration must have taken place. The original ground-thrushes of Siberia were driven across the Himlayas into the Indo-Malay region, where a few of them still retain their original generic character. It would appear that one or two species found a retreat across Bering Strait into America, one being found in Alaska and one in Mexico. The Alaska species probably crossed over after the glacial period, as it is very nearly allied to the East Siberian species. The Mexican species is nearly allied to that found on Bonin Island, and probably crossed over before the glacial period, and was driven southwards by the ice, never to return. The greater number, however, of Asiatic ground-thrushes

appear to have developed into ouzels, which filled India and the Malay peninsula, many of them migrating eastwards to Java and the Pacific Islands, some even reaching across the Pacific Ocean, and forming a colony of ouzels in Central America and north-western South America. After the glacial period had passed away from the North Pole, some of the ouzels seem to have followed the ice northwards, and again to have spread over Siberia, two species even reaching into and spreading over Europe.

Such is a brief outline, so far as we can guess it from the present facts of geographical distribution, of one of the greatest emigrations or series of emigrations which the world has probably ever known, and comparable only to those of the Aryan race of men. The fact most observable in these movements seems to be that birds are guided by something very nearly approaching reason; their habits are not merely the result of their capabilities; there is method in their migrations. Whilst we find that a narrow channel is frequently the boundary of a bird's distribution, we must admit that in most cases it is a self-imposed boundary. It is not that the birds cannot migrate across the sea; the fact is simply that they do not because they have no adequate motive.

The more one sees of migration the less it looks like an instinct which never errs, and the more it seems to be guided by a more or less developed reasoning faculty, which is generally right, but occasionally wrong. The stream of migration which we watched for weeks whilst waiting for the opening of navigation on the Yenesei was almost always from due south to due north, but at the commencement many parties of wild geese, too eager to reach their breeding-grounds, overshot the mark, and although the ice broke up at the rate of a hundred miles

in the twenty-four hours, they overtook and passed the thaw, and finding no food had to turn back. The records of migration which have been kept on the British coast seem also to show that similar blunders are committed in autumn, and that many birds which ought to reach our northern and eastern shores have apparently in like manner overshot the mark, and have had to turn back, some from the sea and others from the continent, and consequently arrive on our western or southern shores.

It has been remarked in this country that migration takes place in autumn in greater flocks or "rushes" than in spring. This is probably caused by the birds lingering at some favourite feeding-grounds, and accumulating in increasing numbers until a sudden frost warns them that they are overstaying their time, and they "rush" off *en masse*, helter-skelter, for summer climes. A somewhat similar accumulation of birds apparently takes place on the skirts of the frost in spring, for when the ice broke up we had a "rush" of various sorts of birds, which suddenly swarmed on all sides.

In the valley of the Yenesei the stream of migration follows the course of the river from north to south, instead of from east to west as at Heligoland. Very few, if any, birds appear to cross the deserts of Mongolia. In South Siberia the stream of migration divides, part of the birds probably following the Angora, and part the smaller stream which retains the name of Yenesei. Among the birds which take the eastern route are the yellow-browed warbler, the Arctic warbler, Blyth's grass-warbler, the pintailed snipe, the Petchora pipit, and many other birds; whilst amongst those which appear only to take the western route are the willow-warbler, the sedge-warbler, the great snipe, the fieldfare, and many others. Occa-

sionally, however, a bird, or a small party of birds which ought to take the eastern route accidentally get wrong, take the western turning and find their way into Europe, where some of them are caught, and are justly considered as great rarities. Most of these little blunderers who have taken the wrong road are birds of the year, who, never having migrated before, have not yet learnt their right way, and may be excused for having gone wrong.

The facts of migration, as observed from an insular point of view, lead to theories which will not hold water when we come to compare them with observations made on a great continent. It must be conceded that birds have certain recognised routes or highways of migration, which they follow with remarkable pertinacity. But different species of birds have in many cases different routes. Some of these routes have been mapped out by Palmen, Middendorff, and Severtzoff, but it would be a great mistake to suppose that all birds migrating from any given locality choose the same route. These highways are complicated, and the route chosen by one species of birds often crosses at right angles that selected by another species. In Cordeaux's interesting book on the birds of the Humber district, many interesting facts connected with this subject are given.

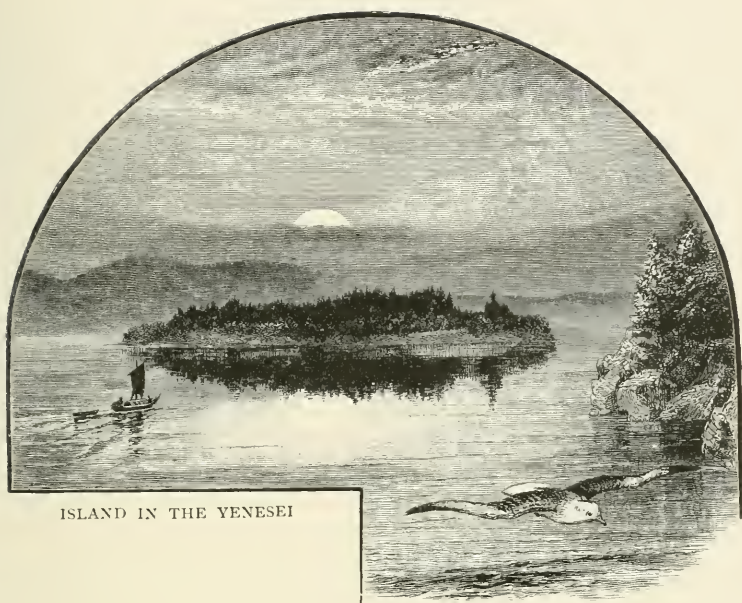
The subject of migration is one which is receiving much more systematic attention than has ever been given to it before. For some years printed forms with schedules of instructions connected with migration have been forwarded to more than a hundred and fifty lighthouse stations on the coasts of England and Scotland by two gentlemen interested in this branch of the study of ornithology—Mr. J. A. Harvie-Brown (my companion on the trip to the valley of the Petchora) and Mr. John Cordeaux. The

returns from these stations, a summary of which is published annually (W. S. Sonnenschein & Allen) under the title of "Report on the Migration of Birds," are extremely interesting, and ought to be studied by every ornithologist.*

* These Reports were continued for a period of eight years, from 1881 to 1887, and then ceased. The Irish observations, however, thanks to Mr. R. M. Barrington, have continued up to the present time.—ED.



BRONZE FORK FROM ANCIENT GRAVE NEAR KRASNOYARSK



CHAPTER XLII.

RETURN TO KUREIKA.

Ornithological Spoils—My Three Companions—The Native Tribes—Birds on a Little Island—Dolgan Names for Various Articles of Clothing—An Island Rich in Birds—The Siberian Pipit—Temminck's Stint—The Arctic Accentor—My Doubts cleared concerning the Thrush seen at Brekoffsky—"Die Wilden"—Evil Influences—Need of a Hero in Siberia—The Two Curses of Russia—Baptized Natives retaining their Charms and Idols—The Strange Hours we kept—Marriage Ceremonies—Funeral Ceremonies—Diseases—Birds seen on approaching Dudinka—Vershinsky—Golden Plover frequenting the Summit of Larch-trees—Gulls—Mosquitoes—The *Thames*—An Impenetrable Island—Kureika in its Summer Aspect.

THERE is a great deal of truth in the old proverb that "it is an ill wind that blows nobody any good." If my visit to the tundra had not been delayed by the blunders or the misfortunes of Captain Wiggins, I might still have missed my birds. As it was, I brought home eggs of three species of willow-warbler which were almost

unknown before; besides eggs of the dusky ouzel and the Little bunting, which were also of great rarity. Had my original programme been carried out, I should certainly have missed all of these, except the eggs of the Siberian chiffchaff. Of my other novelties, the eggs of the mountain accentor and of the Asiatic golden plover, I should probably have obtained a more abundant supply. Then again, the voyage across the Kara Sea would probably have been somewhat barren of ornithological results, whereas my journey home overland, though a somewhat fatiguing one, was, as I hope the reader may learn for himself, extremely interesting, and not wanting in important ornithological and ethnological results.

We left Golchika on Tuesday, the 24th of July. There were three persons on board with whom I could converse. Besides my aide-de-camp Glinski, I had Boiling's company as far as Yeneseisk. Boiling was a well-read man who could talk sensibly on almost any subject, and who had lived many years in Siberia. As far as Vershinsky we were to enjoy the society of Uleman, a native of Saxony, who had emigrated to Poland, and was exiled thirty years before. He lived by himself at Vershinsky with no other companions than his dogs and his birds; at one time he had amused himself by rearing foxes, wolves, and birds of different kinds.

In the summer he went down to Golchika to fish, and in the winter he carved boxes, cigarette-holders, studs, combs, etc., out of mammoth-ivory, and the horns of the wild goat or sheep which inhabits the rocky mountains of the tundra. He was also somewhat of a doctor, and was friendly with all the Asiatic tribes who frequented that country. During our journey he gave me some interesting information concerning the natives, which I looked upon as more reliable than any I had hitherto obtained.

The Samoyedes, Yuraks, and Ostiaks, in Uleman's opinion, are three distinct races, having more or less distinct languages, and each occupying an intermediate position between the European and the true Mongol. The similarity between their numerals leads me, however, to the conclusion that they are very closely allied, and that their languages are merely dialects of a common tongue.

The true Mongol races are much darker in colour, their eyes are more oblique, and less capable of being opened wide, they have flatter noses and higher cheek-bones. Several Mongol races speak dialects of the same language—for instance, the Tatars of Perm and Kazan, the Dolgans, and the Yakuts are all closely allied, and can understand each other without much difficulty, and are all near relations of the Turks.

Early on the morning of the 25th the rough sea and the contrary winds made it impossible for us to proceed, so we cast anchor in lat. 71° . Late in the evening the river was calm enough to make it safe to land, and I went on shore for a couple of hours. On a small island in one of the numerous lakes gulls were evidently breeding; and long-tailed ducks and divers were common. The wheat-ear was very abundant on the clay cliffs, and I saw many Little buntings, bluethroats, shore-larks, Lapland buntings, and red-throated pipits. I shot a dotterel, and found one of its young in down. I also found two thrushes' nests, built on a small ledge of the nearly perpendicular mud or clay cliff, where the ground had slipped. One contained eggs and the other young birds. I was not able to secure the old birds of either nest. They were too wild and shy to come within gunshot. The nest and eggs were like those of the redwing, to which species they doubtless belonged.

From Uleman I got the following Dolgan names for

their various articles of dress. The outside coat with the hood is called *să-kōō'-jŭ*; the under coat *mă-khăł'-kă*; the trousers *chōr-kēē'*; the stockings *chāy-zhēē'*; the boots *bōk-ār-ēc*; the cap *chō-băk*. In very cold weather a pair of over-boots are worn, called *chčrt-ă-kō'-dēē*. The girdle round the waist is *pōy'-ăss*. The men wear a belt across the shoulders for their powder, etc., and a highly-ornamented front or breast-cloth; but the names of these he could not remember. I afterwards ascertained that of the above names those for the trousers, boots, and girdle were Russian names, which the Dolgans appear to have adopted.

We cast anchor on the following evening at Nikandrina in lat. $70\frac{1}{2}^{\circ}$. I spent a few hours on shore, and was well rewarded for my trouble. The island was about twenty versts south of Brekoffsky, and very similar to it in character. It was nearly dead flat, not many feet above the level of the river, and (judging from the drift-wood of various ages scattered on the surface) must be entirely under water when the river is at its height in June. The lowest flats are swamps covered with *carices*, in which reeves and red-necked phalaropes are found. At a few inches greater elevation stretch swamps covered with willows about a foot high; and here the yellow-headed wagtail and the Siberian pipit breed. Of the latter I secured eight specimens. Hitherto I had found this bird very difficult to shoot, for the female was hidden in her nest among the willows, whilst the male soared lark-like, singing in the air out of gunshot. Now both parents were feeding their young with mosquitoes. My attention was attracted to them by hearing repeatedly the call note of a pipit, so loud that I at first mistook it for that of a thrush. I soon found out that it proceeded from a comparatively short-tailed bird flying round me in the

company of half a dozen long-tailed yellow-headed wag-tails, whose breeding-haunts I was invading, much to their consternation. Every now and then the pipit alighted on a willow-tree, where it uttered an alarm-note like *wit, wit*. By watching my opportunity, I secured five males and three females.

On slightly higher ground the swamp was nearly dry, the willows were growing in isolated clumps, and the soil was bare or covered with short grass and moss. Great numbers of Temminck's stints were breeding here, and were soon flying round me in all directions. Many of their broken egg-shells lay about, and I found one of their young in down. Lapland buntings were also common on this piece of ground.

Another slight elevation brought me to different ground, where the willows were four or five feet high, and the open space was gay with the brilliant flowers of the tundra. The red-throated pipit, the Lapland bunting, and the yellow-headed wagtail abounded, and occasionally I saw a reed-bunting, a Siberian chiffchaff, or a species of thrush. I shot one of the latter birds, which proved to be a redwing. I also saw a fieldfare on this island, and shot several examples of the mountain hedge-sparrow. The cold wind with occasional showers keeping the mosquitoes down, I was able to shoot without a veil, and consequently to see and to shoot birds with much greater ease than heretofore.

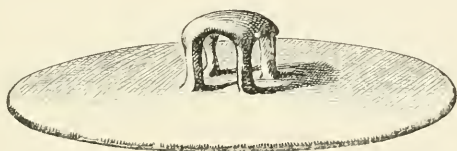
The mountain accentor was a silent bird, but now and then I could hear its tit-like note, *tit-il-il*, proceeding from a willow-bush. It was some time before I was able to see the bird that uttered the cry, as it frequented the thickest of the willow-bushes, sneaking from one to another like a grasshopper-warbler. This bird should not be called the mountain accentor ; a much better name

would be the Arctic accenter. Like the Lapland bunting on the Dovrefield, when it gets out of its Arctic latitude it has to ascend a mountain in order to find a climate cold enough to suit its constitution. Yet it is essentially a bird of the plains, the willow swamps are its natural habitat, and there the female lays her blue eggs and rears her young only a few feet above the level of the sea.

Turning into bed at four o'clock in the morning I slept until noon. When I awoke a steady rain was falling, which continued till night. Meanwhile a boat arrived from Brekoffsky, bringing me the thrush I had failed to secure at that place; Schwanenberg's mate had sent it. It, too, turned out to be a redwing. I now considered this matter settled, and all the doubtful points cleared up.

We got under way at 4 P.M., and steamed steadily up the river. The rain cleared off about midnight, but the sky was still cloudy, and we had no sunshine. Boiling, Uleman, and I spent the night chatting about "die Wilden," as Uleman called the Mongolian races there. He had had a rare opportunity of observing them, having been there five-and-twenty years, and having lived eight of these years amongst them on the tundra, as Sotnikoff's agent. He had seen more of the Dolgans than of the other races. When he first went there, he told us, all the native tribes were virtuous, honest, and truthful, and they still live very peaceably amongst themselves, and quarrel rarely. The selfishness of civilisation is unknown; thus, when one buys or begs a bottle of vodka he shares it with his companions, the oldest man or woman being always served first; even the children get their share. Amongst themselves the rights of property are still strictly observed. In the tundra, or on the banks of the

river, sledges are frequently to be seen laden and covered over with reindeer skins ; they are perfectly safe, and are often thus left for months. The natives used to be truthful in their dealings with strangers, and their word was formerly as good as their bond ; now they have become corrupted by intercourse with the Russians. Siberia is largely peopled with exiles, and even a political exile, isolated from his own set, and removed from the restraints of society, loses after a while the conscience which formerly governed his conduct towards those



BRONZE MIRROR FROM ANCIENT GRAVE NEAR KRASNOYARSK

who formed his surroundings. Smarting also, perhaps, under a keen sense of injustice, he gradually conforms his thoughts and actions to the low standard of morality sure to be found amongst exiled criminals. Truth and honour are, at best, scarcely known in Russia. Like the Greek, the Russian lies without shame, and looks upon cunning as the highest virtue. Siberia is sorely in need of a hero, a man who, having made a fortune honestly by energy, enterprise, and ability, is capable of spending it wisely. In a country where the rouble is worshipped as devoutly as the almighty dollar is said to be in the United States, such a man might do much to raise the tone of society, infuse fresh intellectual life amongst the better-educated few, and establish a new standard of honour and morality in commercial intercourse. I believe the only hope for Russian society lies in its merchants.

They alone may be able to rise above the corruption of the officials, and the superstition of the clergy.

The two curses of Russia are its Church and its State staff. The one sells justice and the other palters with morality. The Emperor is said to be anxious to reform these fatal errors in the administration ; but, in a remote corner like the one to which I allude, he has practically no power. The Russo-Greek Church is nominally Christian, but what elements of Christianity are in it I am unable to say. Its outward appearance is simple buffoonery, savouring more of Cagliostro than of Christ. It has never had any real influence upon the natives. Many of them have, indeed, gone through the ceremony of baptism, and wear crosses of silver or brass as charms, but none the less do they retain their old faiths or seek the aid of the Shamanski in their troubles. Every native family has a special sledge set apart for its household gods, drawn by reindeer which are also set apart for this purpose, and covered in by a "clean" reindeer skin, that is, a skin upon which no man has ever slept. The images or idols are made of wood, stone, iron, anything in short that can be carved to resemble a human being or an animal. These idols must be looked upon more in the light of charms than of gods. They are never prayed to. Their only use seems to be to act as a centre of magnetic or spiritual influence. The Shaman arranges them, walks round them, beating incessantly on his drum, whilst the people dance around until he, and probably they, become more or less ecstatic, or under the sway of frenzy. It is said that under this excitement the Shaman will often foam at the mouth. In this state they believe a certain supernatural influence is exerted, through which information is obtained, supposed also to be of a supernatural character. It principally

relates to the weather, or to success in catching fish, or trapping or shooting foxes, etc. No other use is apparently made of these idols. This superstition seems to be common to all the Asiatic tribes of Siberia, and I could not discover that they had any other religion, beyond a hazy notion of the existence of a Good Spirit and of happy hunting-grounds.

As we discussed these customs of the natives we were steaming up the river with a slight head wind and a cloudy sky. We had drifted into keeping curious hours. We rose at noon and took a cup of tea together; at 4 P.M. we had a substantial breakfast, followed by a cup of tea at eight. At midnight we dined, and at 3 A.M. we had again a cup of tea, and turned in soon afterwards for the night.

From day to day I lost no opportunity of obtaining scraps of information from Uleman about the natives. It seems that there are few, if any ceremonies observed with regard to marriage. The chief point to be settled is the number of reindeer the bridegroom will give to the father of the bride in exchange for his daughter. Those natives who have been baptized have only one wife, but the others sometimes have two, and, if they be rich, even three. The wives of the natives are said to be always faithful to their husbands. There is more ceremony observed in the funerals. Those who are not baptized do not bury their dead. The dead man is laid out upon the tundra in his best clothes, his bow and arrows, his knife, and other personal effects being placed around him. Some of the fleetest reindeer that belonged to him in life are killed and left by the corpse; bread and fish are also laid near, so that in the next world he may arrive provided with the necessaries of life. The principal diseases from which the natives suffer are

fevers of various kinds. Consumption and scurvy, so common among the Russians, are almost unknown to them. No doubt their fondness for raw flesh, coupled with their active open-air life, prevents the latter malady. Since their increased intercourse with the Russians, both syphilis and smallpox have unfortunately appeared among them with dire effect.

About fifty versts before we reached Dudinka, we noticed several red-breasted geese with their young broods on the banks of the river, but I could not persuade the captain to stop to give me the chance of a shot. Occasionally we saw a pair of peregrines and a small bird of prey, which I took to be the rough-legged buzzard.

I went on shore on Sunday at Vershinsky, walking three versts on the banks of the river to the place where the steamer stopped to take in wood for the engine fires. I crossed a succession of little valleys full of alder and willow-trees, and frequently having a pretty little tarn in their hollow. The high land was tundra, with abundance of reindeer moss, and thinly scattered over it were stunted and weather-beaten larches. Vershinsky is the most northerly point (lat. 69°) at which I met Pallas's house-martin. I shot a young Little bunting and white and yellow-headed wagtails. The Little bunting was unusually common. I saw both the Arctic and common willow-warblers, and also several pairs of European golden plover. The latter were very anxious to entice me away from their young. Occasionally they uttered their plaintive cry from the ground, but oftener from the topmost branch of a larch-tree. I shot one, perched at least fourteen feet aloft. Another bird which frequented the tops of the larch-trees was the wood-sandpiper. I shot a pair of redwings and some young fieldfares;

bluethroats, also, had fully-fledged young. In some of the more sheltered valleys patches of snow were still lying unmelted. The wild flowers were very brilliant, and, after I had shot off all my cartridges, I gathered a few and pressed them. Rhubarb and a species of thyme were abundant there. One of the passengers on board was my friend the second priest of Turukansk, and he gathered a quantity of each for medicinal purposes, saying that the natives were ignorant of their uses.

Early in the morning of the 30th July, we stopped an hour at an island to take some barrels of salt fish on board. I went on shore and found a large colony of Siberian herring-gulls sleeping on the sand. By far the larger proportion were immature birds, which apparently do not go farther north. I shot one, and the rest flew off to a distance. The day turned out very wet, and we did not go again on shore. We had scarcely had a fine day since we left Golchika. We were told that this was an exceptionally cold summer; and for one great blessing we had to thank the keen winds—they banished the mosquitoes. We had, indeed, almost forgotten their existence until the preceding day. When I was on shore it was a dead calm, the clouds were black as before a thunderstorm, and the bloodthirsty insects were swarming in thousands. I had neglected to take my gauntlets, and was, in consequence, much bitten on the wrists, causing me some slight suffering; the irritation of my hands prevented my sleeping, but it was accompanied by little or no swelling. Either the mosquitoes had exhausted their stock of poison, or my blood had grown so thin that they did not care to expend much virus upon it.

In the evening we stopped an hour at Igarka to take our leave of the ill-starred *Thames*. The water had

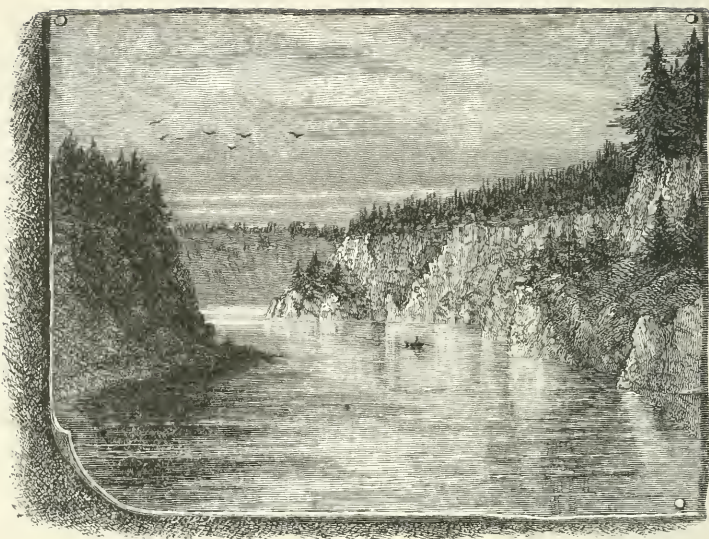
fallen away some distance since we had abandoned the vessel, but the sand in which she lay had a considerable slope; still it seemed the general opinion that she might yet be got off before the season was over. In a few days the captain was expected down with the Zessedatel to hold an inquest on the ill-fated vessel, the result of which could not be foretold, except that one might be perfectly sure that a certain imaginary friend in Omsk would be considerably enriched thereby. It was grievous to see so fine a craft thrown away. The captain had no doubt done his best by her; but he was a man lacking administrative skill, whose actions always seemed guided by the impulse of the moment. Nevertheless, his crew, who half hated and half despised him, were obliged to confess that he was every inch a sailor.

The first real summer day we had had for a long time was August 1st. We steamed up the river under a cloudless sky, and with scarcely a breath of wind. We passed a large colony of sand-martins about noon. In the evening I landed for half an hour on an island. The shore was bare sand, covered higher up with a dense growth of *Equisetums* which soon ended in impenetrable willow-thickets. The island was some miles long. Boiling said he remembered it fifteen years ago without a tree or a green leaf upon it, nothing but bare sand. Birds were not abundant. I saw yellow-headed and white wagtails, old and young, and heard the cries of ducks and divers and terek-sandpipers beyond the willows. Temminck's stints were common. The absence of grass prevented other birds frequenting the island.

The following day we cast anchor at the village of Kureika, at four in the morning, to take in wood, and I availed myself of the opportunity to go on shore and have an hour's shooting on our old hunting-grounds, and

to take a cup of tea with old Jacob, the Starrosta. The trees being now in full leaf, the short grass having grown to a height of two feet or more, and the level of the rivers and lakes having fallen five or six feet, the aspect of the place was utterly changed. The Arctic willow-warbler was very common, and still in full song. Wagtails appeared to be less numerous, but the redpolls and the lesser whitethroats still frequented the birches. Young fieldfares were abundant, and I heard the song of the scarlet bullfinch. The double snipe was also there, and must have been breeding. The house-martins were swarming in countless numbers. We seemed to have almost got below the mosquito region, for the weather was warm, and yet we scarcely saw any of these insects. On the other hand, a small midge was occasionally abundant, and irritating.

It was interesting to see the familiar place once again, every feature of which was stamped upon our memories by the monotony of our long, weary waiting for summer. It was almost impossible to believe that only two months ago the banks of the Kureika were still white with snow, and the possibility of the shipwreck of the *Thames* scarcely dreamed of. So much had happened in the interval that it seemed to be years ago.



THE KAMIN PASS

CHAPTER XLIII.

BY STEAMER TO YENESEISK.

✓ Silovanoff—Hospitality of the Inhabitants—Interior of One of the Houses—A Model Village—The Sect of the Skoptsi—Their Exile—A Fish Dinner—Birds near Silovanoff—Redstart—Lost in the Forest—The Steamer Aground—Michael Susloff—A Topsy Blagachina—Discussion about Siberia—Its Gold Mines the Ruin of its Prosperity—A Dense Forest—Birds on the Banks—Verkhni Ambatskia—Decrease of the Ostiaks—Their Boats and Canoes—Birds on the Pasture Land—The Forest Trees of the Yenesei—Larch—Spruce Fir—Siberian Spruce Fir—Scotch Fir—Cedar—Birch—Alder and Juniper—Poplar—Picturesque Scenery—Two New Birds added to my List—The Kamin Pass—The Ibex—Hot Weather—The Amount of Wood our Engines Consumed—Our Hostess' Hospitality—A Poor Bag—Vegetation in the Forest—The Black Kite—The Taz—Yermak—Swallows.

AT sunrise on the morning of the 3rd of August the barge was anchored at Silovanoff to take in more wood, whilst the steamer went to Turukansk and back. I went on shore to shoot, and to inspect the extraordinary

inhabitants of the village. It was evident at a glance that the people here were a different race from the Yenesei Russian. The place looked quite English! Order reigned, and a hundred little details betokened industry and civilisation. The boats were larger and better finished; instead of being hauled up on shore through the mud, a wooden landing-stage was provided for them, with a revolving wooden roller at the head. Instead of having to climb a muddy inclined plane to reach the houses, a flight of wide and easy wooden steps led up to them, with a neat gate at the bottom to keep the cows from coming up. To reach an ordinary Russian peasant's house one has to pick one's way across a dunghill. Here the surrounding space was clean, the cows being railed off on every side. The inhabitants were most hospitable. Although it was only half-past two the women-folk were stirring. Soon the samovar came in steaming, and tea, sugar, bread and butter, and smoked herrings were laid before us. "That says more than it looks," as the German idiom has it: tea and butter are kept in store for strangers only, and are never tasted by the inhabitants. The house we were in was far better than any we had visited between Yeneseisk and the sea; the rooms were lofty, the windows large, well glazed, and double; there was a large and well-built stove in it, and due provision was made for ventilation. A special stove was erected to smoke out mosquitoes. A clock hung upon the wall, and there were positively books on a shelf! The carpenter's work was excellent, evidently planed, and not merely smoothed with an axe. There was also ample evidence about that the village possessed a competent smith. Outside, the same signs of honest toil prevailed: casks were being made, and boats were being built. Several fields, care-

fully railed off, were planted with potatoes. Everything betokened order, industry, and comparative wealth. In sooth, a model village, without crime, where idleness and drunkenness were unknown. And yet the people did not look happy. There was no fire in their glance, no elasticity in their step, there seemed to be no blood in their veins. They were as stolid as Samoyedes; their complexions were as sallow, and the men's chins as beardless. Strange to say, there was not a living soul in the village under forty years of age. It was the village of the Skoptsi, a sect whose religion has taken an ultra-ascetic form—teetotalism carried out to the bitter end, an attempt to annihilate all human passions, not only their abuse but their use as well. All the men were castrated, and in all the women the milk-glands were extracted from the breasts. They ate no animal food except fish. They did not even allow themselves butter or milk. All intoxicating and exciting drinks were forbidden, such as spirits, wine, tea, and coffee. On the other hand they had a very mild beer called quass, which, coming up from the cold cellar on a hot day, was very refreshing. It was a very mild beer indeed, certainly not XXXX, nor even single X. Possibly its intoxicating properties might be represented in terms of X by the formula $\sqrt[4]{X}$. I was not able to procure a Skoptsi pipe, for tobacco in all forms was prohibited. Although the population of the village numbered under a score, yet there were two sects of Skoptsi among them: one drank milk and the other did not. They kept all the holidays of the Russian Church, but had no priest, saying that every man was a priest, and could perform priestly offices only for himself; so curiously do eccentric errors and half-forgotten truths grow side by side. These Skoptsi have been justly banished to this island by the

Russian government, Uleman said principally from the neighbourhood of the iron mines near Ekaterinberg. They told me there were formerly seven or eight hundred of them, but that they were literally dying of starvation, and they petitioned the Emperor to send them elsewhere, to some region where they could cultivate the land and grow vegetables. They were consequently sent to a place near Yakutsk, where some thousands of these amiable but misguided people now live. After breakfast we spent some hours in the forest, then enjoyed the luxury of a commodious Russian bath, and were afterwards invited to dine. We had, of course, a fish dinner. First a fish-pasty of tcheer, then sterlet, followed by a refreshing dessert of preserved cranberries. A pint of quass each completed a by no means despicable repast.

In the forest birds were abundant; fieldfares and redwings had fully-fledged young. I saw several three-toed woodpeckers, and shot a Lapp-tit. Redpolls were very numerous. The song of the Arctic willow-warbler was continually to be heard, and occasionally that of the common willow-warbler. The Siberian chiffchaff was carefully tending its newly-fledged brood, and only its alarm-note was now to be heard. Martins were swarming like bees under the eaves of the houses, and a flock of Siberian herring-gulls, mostly immature, were watching the fishing-boats. On the pebbly beach young and old white wagtails were running about. I shot a young bluthroat and a young redstart. The latter was a new bird for my list. As in the Petchora I did not find it so far north as the Arctic Circle.

The forest behind Silovanoff was very luxuriant and very picturesque, and I enjoyed my solitary rambles in it beyond measure. Now and then I came to a charming swamp abounding with waders, and ever and anon

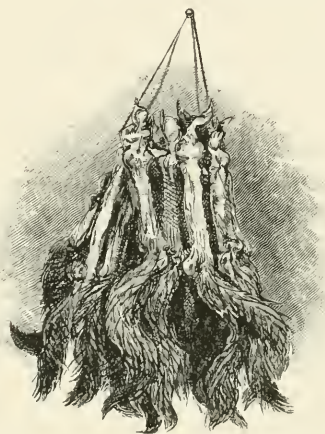
glimpses of thrushes excited my hopes as the wary birds frequented the thick underwood. I was specially on the *qui vive* for rare thrushes. I had shown my friend the priest the skin of the Siberian ground-thrush, the solitary example of which rare bird I had obtained at Kureika, and he had immediately recognised it as the *chorna drohst*, and told me that it was more abundant in the district round Turukansk than anywhere else. I searched far and wide in the forest, but in vain. I was not fortunate enough to obtain a second example. A good specimen of the dark ouzel in its first spotted plumage was, however, some compensation for my trouble. In my efforts to explore the country I nearly lost myself a second time. I had been wandering for some hours in the forest when my appetite warned me that it was time to return home. I took out my compass and steered west, but the further I went the more impassable the forest became. I found myself in a swamp so deep that I could only make slow and uncertain progress by struggling from one fallen tree-trunk to another, and finally I stuck fast altogether, and had to turn back. The question to decide was, should I try to round the swamp to the north or to the south? I had not the least idea which way I had come, but fortunately I had a good map in my pocket and succeeded in striking the Yenesei without making any very serious detour.

When the steamer came back from Turukansk we heard that it had had sundry misadventures on the way. Once or twice it had run aground on a sandbank, and had got off with difficulty. To provide against these accidents twenty or thirty long poles are kept on board, and it is very amusing to see them in action. The moment the ship grounds all is noise and confusion. The captain shouts to the two men who, one on each

side of the bows of the ship, are constantly calling out the depth of the water (which they measure with long poles), *Chetire*; *Tre s'polovina*, etc., and in a moment all is hurry-skurry and bustle, and the shallow side of the steamer suddenly develops a score or more legs like a centipede, the men straining on the long poles till they bend again, organising a strong push and a push all together by the most unearthly screams and yells.

When we left Silovanoff we were minus one passenger, Michael Susloff, the second priest of Turukansk, by far the most active and intelligent Russian I had met. He was sent by the Archbishop to visit the Ostiaks on the Taz, and was busy writing a report for his Eminence. He promised me a copy of it. It contained much interesting ethnological information, and a number of valuable historical facts regarding the ancient town of Mangaze, extracted from the archives of Turukansk. Susloff told me that he did his best to prevent a rupture between the late Zessedatel and Wiggins and Schwanenberg when the two captains passed through Turukansk in the previous autumn, but the Blagachina and the Postmaster egged them on for private reasons of their own; Sotnikoff and Ivanoff were also among the conspirators for obvious considerations.

At the monastery the Blagachina of Turukansk came on board to install his mother as a passenger on the ship; he was, however, so inebriated that he could hardly



BUNCH OF SQUIRRELS' SKINS

speak, and he speedily left without taking leave either of Kitmanoff or of myself.

We did not get a chance of going on shore till late the following evening, when it was too dark to shoot. Boiling and I had a long talk about Siberia, and the anomalous facts in its domestic history. It presents the spectacle of a healthy race of people, living in a healthy because dry climate, continually replenished by emigrants and exiles, and yet the population remaining almost stationary; a country with capabilities of becoming "rich beyond the dreams of avarice" continuing poor. Report affirms that scarcely one merchant in ten is solvent, and that not one bank in ten could pay more than ten shillings in the pound if wound up. The question arises, to what cause is this extraordinary state of things to be attributed? Boiling ascribed it all to the gold mines. The land, he said, cannot be cultivated, and manufactures cannot be successfully carried on, because the peasants and workmen are continually tempted away by advances on account of wages, and by having the opportunity of pocketing gold. Arrived at the gold mines they are overworked. A certain task is allotted to each man to perform every day, and he must work until it be done. Not unfrequently it takes twenty hours out of the twenty-four to finish it, and then, after insufficient rest, he has to turn to work again, often in wet clothes. The miners have to "work the dead horse" for perhaps a year; that is to say, the advance of wages which they received on being engaged having been speedily squandered, it usually takes them a year to save sufficient from their pay to clear off their debt. They do not like to return to their village empty-handed, so they steal gold as fast as they can. When at length they have made a purse they come home, possibly with ruined

constitutions, probably utterly demoralised with extravagant habits unfitting them for their former life. Many never reach home at all. Some die on the way, and others are robbed and murdered in the forest for the sake of the gold on their persons. The Russian law prohibits the purchase or sale of gold, and compels the owners of mines to sell to the Government only. Nevertheless a large trade in the precious metal, principally in that which has been stolen, is carried on, and considerable quantities find their way to China, or are bought by the Kirghis. This is well known to the police, who are, nevertheless, seldom able to detect it. Siberia is rich in gold mines, but its true wealth is to be found in its soil, not under it.

We had an hour on land the following afternoon. We were now in lat. 64° . I went first into the deep forest, the pines of which had evidently been burnt some years ago. Only a few charred trunks remained, and the forest had become a dense mass of birch-trees. Under foot spread a thick soft carpet of moss, lichen, and liverwort, thinly sprinkled over with cranberries laden with unripe fruit, the aromatic *Ledum palustre*, the graceful *Equisetum sylvaticum*, and the *Lycopodium annotinum*. I also found three ferns, the first I had seen for some time: *Polypodium dryopteris*, *Athyrium filix-femina*, and *Lastrea multiflora*. During half an hour's walk we saw only one bird, a capercailzie or a blackcock, the thickness of the forest preventing the identification of the species. On the bank, among some willow thickets, birds were more numerous. I shot two young Siberian chiffchaffs out of a family noisily flying from tree to tree like a brood of tits. Young bluethroats were also on the wing. During the evening we saw several birds, two pairs of grey-headed white-tailed eagles, and a pair of

smaller birds of prey with apparently a slightly longer tail and somewhat narrower wings. The wings appeared to be darker in colour than the tail and the rest of the body. I took the larger bird to be the white-tailed eagle, and the smaller the rough-legged buzzard.

We stopped a couple of hours about noon the next day at Verkhni Anbatskia. This place used to be the great rendezvous of the Ostiaks; as soon as the river was free from ice a kind of yearly fair was held there, to which they brought the tribute of skins annually paid to the Government, and at the same time purchased meat and other necessities. At the beginning of this century, about two hundred large boats were sometimes moored on the banks of the small river which here joins the Yenesei. Thirty years ago the number had dwindled down to eighty, and at the time of my visit they did not exceed a score. This decline of traffic may be partly accounted for by meat-depôts having been established in other villages, but there can be little doubt that the Ostiaks have largely decreased in numbers and in wealth. They have been plundered and demoralised by the Russian merchants. One of these wealthy arch-robbers still lived here, carrying on a contraband trade in spirits with the unfortunate Ostiaks. The Government had tried to trap him, but hitherto he had eluded the grasp of the officials. I bought three sable skins of him for twenty roubles each, fine black sable with white hairs, the only good skins I saw in Siberia. The Ostiaks' boats are unique in form, built without nails, and very picturesque. Their canoes are light and extremely elegant, and are made of one, or sometimes two pieces of wood.

Around the village undulated pasture land, sprinkled over with spruce fir, and fragrant with white clover in full bloom. Birds abounded. I shot a nutcracker, one of a

flock of seven or eight. Young white and yellow-headed wagtails were numerous, but I devoted most of my attention to the young thrushes. Two species, with different voices, frequented the spruce firs. I secured two of one and one of the other. One species proved to be the dusky ouzel, whose eggs I had discovered at the Kureika; and the other was a new species for my list, the black-throated ouzel (*Merula atrigularis*). This was probably the northern limit of its breeding range. On the shores of a small lake the green sandpiper was very noisy. On the banks of the river both the house-martin (doubtless the Siberian species) and the sand-martin swarmed. I watched them pursue and finally drive away a merlin, who pertinaciously approached too near their nests. The alarm-note of the young dusky ouzels was very much like the *u-tic* of the wheatear, but louder; it might be expressed by *tick-tick*. On the stones on the bank of the Yenesei were several of the latter bird.

As we steamed up the river on the following day, we discussed the subject of the forest-trees of the Yenesei, and, to the best of our ability, we thoroughly ventilated it. So far as I can ascertain, there are five trees belonging to the Pine group. They are as follows :—

Larch (*Pinus larix*). This well-known tree extends farther north than any of the others, and is abundant, though small, as far north as lat. $69\frac{1}{2}^{\circ}$. Farther south it attains large dimensions. At Yeneseisk a larch-pole, suitable for the mast of a ship, 36 inches in diameter at the stem and 18 inches at the point, and 60 feet long, may be bought for a sovereign. This hard dark wood looks well for the walls and ceilings of the peasants' rooms.

Spruce fir (*Picea obovata*). This elegant tree, with branches growing out of the trunk down almost to the

root and trailing on the ground, extends nearly as far north as the larch—say to lat. 69° . It is a very important tree for commercial purposes. Its wood is white, of very small specific gravity, extremely elastic, and is said not to lose its elasticity by age. It makes the best masts for ships, and is for oars the best substitute for ash. Snowshoes are generally made of this wood. The quality is good down to the roots, and it makes the best “knees” for ship-building, knees which do not require to be cut out of the solid, or artificially bent. It is, however, subject to very hard knots, and care must be taken not to blunt the edge of the axe in cutting it.

Siberian spruce fir (*Larix sibirica*). This tree differs from the common spruce in having a smooth bark of an ash-grey colour; its leaves are also of a much darker blue-green. We did not meet with it further north than lat. 63° . It has little commercial value, being soft and apt to crack and decay. The ease with which it is split causes it to be abundantly used for firewood and for roofing.

Pine or Scotch fir (*Pinus sylvestris*). This well-known tree scarcely extended so far north even as the preceding, say to lat. $62\frac{1}{2}^{\circ}$.

The Swiss Pine or “Cedar” (*Pinus cembra*) resembles in appearance the Scotch fir, but its timber is said to have a much higher marketable value. It is dark, but not so dark as larch, and there is very little of the white inferior wood next to the bark. If stacked too long in the forest it is liable to be attacked by worms, but for furniture and indoor use it is the best timber to be found in Siberia. It is reputed never to rot, shrink, warp, or crack. Soft and easy to work, it is nevertheless of fine grain, and is almost free from knots. The Ostiaks build their ships of it. They hew down a trunk two or three feet in diameter,

split it, and of each half make a wide thin board; the rest is wasted, for the axe is an extravagant tool. This tree is found up to lat. $67\frac{1}{2}^{\circ}$.

We found the common birch up to lat. $69\frac{1}{2}^{\circ}$, and in various places we noticed that where a pine forest had been burnt or cut down, it appeared to be immediately replaced by a luxuriant growth of birch. The creeping birch and two or three sorts of willow were common in suitable localities on the tundra as far north as we went —*i.e.* lat. $71\frac{1}{2}^{\circ}$.

The alder was abundant at $69\frac{1}{2}^{\circ}$ and the juniper at 69° .

I did not observe the poplar at the Kureika in lat. $66\frac{1}{2}^{\circ}$, but it was abundant at Silovanoff in lat. 66° . The Ostiaks hollow their canoes out of the trunk of this tree.

As we conversed upon this interesting topic of northern trees, a pair of peregrines loudly protested against our approaching so near the shore, and in the afternoon I twice noticed a large, very dark, and long-tailed hawk sail majestically between the ship and the shore, apparently taking no notice whatever of our noise and smoke. Possibly it might have been a female goshawk.

The next day we steamed through much more picturesque scenery than we had hitherto seen on the Yenesei. The banks were much more hilly, and the course of the river much more winding. For some few versts we steered due north; the river not being more than half a mile wide here, its character resembled that of lake scenery.

We stopped for two hours at Samorokova in lat. 62° . Birds were not abundant; they were as a rule in full moult, and were very silent and retiring. Nearly all

those we shot were birds of the year. I added two fresh ones to my list, the tree-pipit and Blyth's reed-warbler (*Acrocephalus dumetorum*). The latter was making a sound like "tick-tick." Sand-martins were breeding in great numbers on the banks of the river; they evidently had unfledged young. As I walked on the top of the bank, they flew at me uttering a shrill harsh cry, which I do not remember having heard in England. The Siberian chiffchaff and the Arctic willow-warbler were also common,—the latter in full song, the former uttering its plaintive alarm-note only. For some days the common sandpiper had frequented in large numbers the sand at the water's edge. The common gull haunted the river, and we rarely saw the larger species. In the evening the vessel stopped an hour to take in wood, just outside the Podkamennaya Tungusk river, and in the fir-trees behind the village I shot a couple of black-throated ouzels, female and young.

In the dusk of the following evening we steamed up to the entrance of the Kamin Pass, and there anchored for the night, the pilots being unwilling to risk the navigation of that part of the river without daylight.

Soon after four we got under way again. The scenery here was certainly very fine. It looked very different on a sunshiny summer's day from its appearance on a blustery winter's morning. Many of the rocks appeared to be limestone, conspicuously veined with quartz. In one place high up the cliff was a large colony of house-martins.

The peasants told us that the mountains are frequented by a kind of ibex, which they call *kabagar*; they described it as having very small horns but long hair, and they told us that it produces musk. This animal must not be confounded with the *kalkun* a kind of goat

found on the mountains of the tundra towards the Katanga river. The latter is much larger, has also long hair, but has heavy horns.

The next day we did not get a chance of going on shore until nearly midnight, when it was too dark to shoot. The last few days had been oppressively hot, and we had all found it difficult to sleep. Our food was ill adapted to the weather. Beef, fish, and bread, with no vegetables, are at best a somewhat heating diet, and when the fish is sturgeon and sterlet, delicate as salmon and rich as eel, melting in the mouth, the heating properties of the regimen are increased. There scarcely stirred a breath of air, the thermometer must have been between 80° and 90° in the shade, and we continually felt a stray mosquito busily employed injecting poison into our veins. No wonder the blood gets hot and feverish under such conditions, and that we tossed upon our hard bunks and wooed the fickle goddess of sleep in vain. As the result of these circumstances, Boiling and I went on shore at midnight, the anchor having been dropped to allow a boatload of firewood to be stored in the barge. Our engine fires burnt a great quantity of wood, twelve sazhins a day, costing a rouble and a half each. A sazhin is a stack three arshins high and as many long, the width of the length of each log, say one to one and a half arshins; each arshin measures twenty-eight English inches. We had to stop once or twice every four-and-twenty hours to get the requisite supply of firewood on board, and with the occasional additional delays in getting casks of salt fish, we lost nearly a third of our time. I always took advantage of these stoppages to go ashore and pick up a few birds, but upon this occasion it was dark, and I did not take my gun. Boiling and I went out in the village to forage. We hoped to

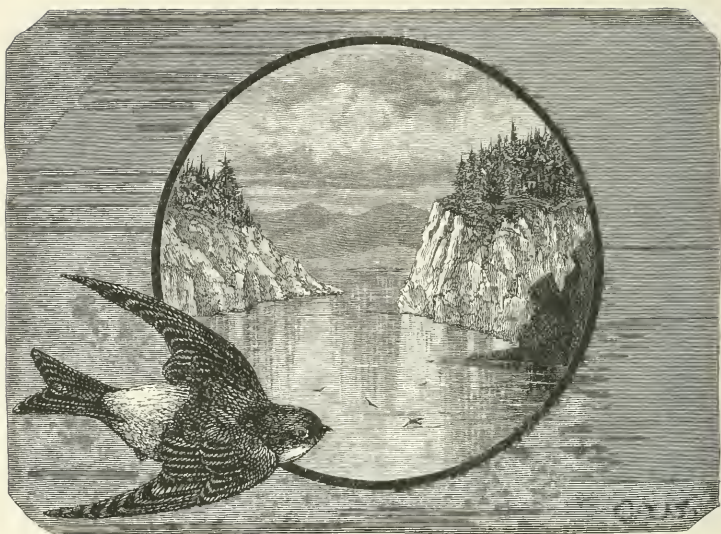
find some peasant who, from the recesses of his cellars, would bring up milk and fruit to cool our hot blood. We met an old acquaintance of Boiling's, and went home with him. Curiously enough his house happened to be the one at which we had stopped to change horses in the winter. The man's wife was in bed, but when she heard of our visit and of our need, she got up at once, and in a few minutes we were luxuriating in a large basin of deliciously cold milk and a plate of freshly gathered bilberries. We ate so much that I was really afraid that we should be ill, but the acid of the fruit had the desired effect upon our fevered condition. We returned to the steamer, and that night enjoyed a more healthy sleep than we had had for a week or more, awaking the next morning cool and refreshed.

Next day I had a couple of hours in the forest about noon, but did not get a bird, my bag consisting of one grey squirrel only. I caught a far-off glimpse of a woodpecker, and occasionally saw a nutcracker or a tit out of shot. I suppose that most birds were then in full moult, and were hiding away. The oak-fern was very abundant, and I noticed for the first time the beech-fern. Bilberries were ripe and plentiful; cranberries grew in less numbers and were scarcely ripe. On the banks of the river we had seen several birds of prey; occasionally three or four had passed us on the wing together. It was the first occasion on which I noticed a kite, *Milvus ater*, a large bird with a long forked tail, his colour dark brown; when one could see the body underneath, a broad pale band across the tail and across each wing was visible. In the forests the mosquitoes were at this time very common and virulent, but on board we escaped them and the midges, thanks to a cool breeze from the north. That afternoon we passed the mouth of the Taz,

a river which it may be hoped will some day be turned into a canal to the Ob. Three expeditions have successfully made the passage. The river rises from a marsh, across which boats may be pushed to the source of a tributary of the Kett, which flows into the Ob.

At noon on the 12th of August we passed the village of Yermak, once the San Francisco of Siberia. The gold mines lie some two hundred versts up the mountains that rise behind Yermak towards the watershed of the Yenesei and Lena. Yermak used to be five versts in length; it was once the centre for the head offices of the gold mines, and the emporium of Siberian gold. At that time large houses were built in it, handsomely furnished billiard-tables erected in them, French cooks were brought over to prepare for the inhabitants the delicacies of a European table, and champagne flowed like water. Thousands of horses filled the stables of the city, its granaries overflowed with corn, and everything that money could buy was to be found in its stores. At the time of my visit all this had disappeared. Each gold mine has its offices on the spot, and the miners are provisioned by contract. On the whole one cannot regret the change. Such centres of luxury and riot do much to deteriorate a nation; and the more their dimensions can be contracted and the site removed from the haunts of peasant life, so much the better for the morality and ultimate prosperity of the country.

I find recorded in my journal of that day the first sight of barn-swallows since shooting the solitary example of the species at the Kureika. Cranes passed us going northwards. Eagles and kites, and now and then a small hawk, were the principal birds we met as we steamed along.



IN THE KAMIN PASS

CHAPTER XLIV.

FROM YENESEISK TO TOMSK.

Once more in Yeneseisk—Country on the Banks of the Yenesei—Moulting Birds - Blyth's Grass-warbler—Nordenskiöld's Goods—A Holiday—A Dinner Party at the Ispravnik's—From Yeneseisk to Krasnoyarsk—Three Days at Krasnoyarsk—The Club—Telegraph Communication—Scurvy amongst the Tungusks—The Neighbouring Country—From Krasnoyarsk to Tomsk—Magnificence of the Autumn Foliage—The Villages—The Birds—Difficulties in the Way—A Friendly Ispravnik—Tomsk—The Wreck of the *Thames*.

ON the morning of the 14th of August, soon after tea, we reached Yeneseisk, having been twenty-two days on the road, which was considered a good passage. I was busy all the afternoon getting a large empty room in Boiling's house fitted up to unpack and dry my skins. I found them in better condition than I had expected, but nevertheless far too damp for me to venture travelling with them for a month longer, unless artificially dried.

My skins being laid out so that the process of drying might go on, I devoted most of the next day to exploring the banks of the Yenesei. The country I found almost flat, and for miles there stretched an extent of meadow land that had recently been cut for hay. It was intersected with numerous half-dried-up river-beds, running parallel to the Yenesei. These beds were full of tall *carices* and various water-plants, and were almost concealed by the willow-trees; occasionally the water was open, running between muddy borders. On this meadow land wagtails were numerous, especially near the town; but I saw only one species, the masked wagtail, *Motacilla personata*. It was, however, very hard to get good specimens of any bird. Nearly all being in full moult they did not sing, and remained concealed in the herbage, making it difficult to shoot them, and when shot they proved very imperfect. Many of the young birds also were not yet fully fledged. Kestrels were very abundant, and I frequently saw as many as a score on the wing together. Richard's pipit was also common, frequenting the newly-mown meadows; I shot both old and young. Occasionally I saw a shrike which appeared to be the great grey shrike, but I did not succeed in bringing one down. Magpies were numerous, especially near the town. Singularly enough, we did not see any before reaching Yeneseisk, yet Uleman told me that rarely a summer passed without one or two being seen at Vershinsky. Crows abounded, but I saw no jackdaws. I shot both the great tit and the cole tit. Amongst the willows one of the commonest birds was Blyth's grass-warbler, *Luscinola fuscata*, mostly young ones not yet fully fledged. I shot one Siberian chiffchaff, but did not see any young. My attention was frequently attracted by small parties of young birds among the willows, uttering a

loud *tic-tic-tic*. These proved to be Pallas's grasshopper-warbler, *Locustella certhiola*. On one occasion I heard a similar sound, very loud and harsh, emanating from some sedges near a pool. Presently the bird came in view perching on a reed, and I felt sure I had a large reed-warbler. It turned out, however, to be a male ruby-throated warbler. Frequenting the willows I also found the yellow-breasted bunting and the tree-pipit. In the neighbourhood of the running water and muddy banks sandpipers were numerous. Three species were almost equally abundant—the common sandpiper, Temminck's stint, and the green sandpiper.

There did not appear to be much actual migration going on. Starlings were collected together in great flocks, but probably remained until driven away by cold weather. Now and then a small party of cranes passed overhead, generally flying south. Boiling told me that the swallows ought to have left before our return to Yeneseisk. When we first arrived house-martins were swarming, having bred on the church-towers; a few lingered for a week, but their number appeared to diminish daily. Occasionally I saw a swallow, which did not seem to be a common bird at that season. On the other hand sand-martins flew over the meadows or skimmed over the Yenesei in thousands. Both the common and tree-sparrows congregated in large flocks. Hawks were very numerous; there was a large brown buzzard, a dark-coloured kite, and several small hawks.

Boiling meanwhile was busy superintending the unpacking of Nordenskiöld's goods. It was remarkable how little damage they had suffered, after having lain for a year at Koreopoffsky. On the whole the various articles imported seemed to give satisfaction. Norden-

skiöld, however, had put 50 per cent. on the original cost-price in Sweden, to cover the expense of freight, insurance, and agents' commission; the merchant who bought them here would require at least 25 per cent. profit on an average, so that ultimately double the Swedish price would probably be demanded for them.



DOLGAN LADY'S BONNET

This made some of the articles too dear for the Russian market. Sugar, for instance, for which nine roubles a pood was asked, was sold at the last fair in Irbit at seven roubles. Other articles, on the other hand, were scarcely good enough for the Siberian market, such as nearly all the glass-ware. The Russian government had granted entrance duty free to these goods and a further shipment. The English manufactures gave the most

satisfaction, and no doubt a still better quality of these would have been yet more appreciated.

I spent most of the day of Saturday, the 18th of August, in P. P. C. visits. This was a holiday; a harvest it must have proved to the *isvostchiks*, or cabdrivers. The merchants and the various official personages sat in state to receive visitors, and occasionally slipped out to pay calls themselves. On a side-table in each house, vodka, sherry, or madeira, dishes of cold meat, sardines, dried fish, etc. were laid out, but no plates and very little cutlery were to be seen. The visitors took a mouthful and a glass of wine standing, chatted a few minutes, and then left. I paid my visits with one of the telegraph officials in uniform, who kindly translated for me. He had just got two months' leave of absence, and was going to Warsaw, so we arranged to travel together. I spent the whole of the next day finishing the packing-up of my birds.

A dinner at the *Ispravnik's* on the following Monday furnished me with a curious example of Yeneiseisk customs. I received a written invitation in French to dine at two o'clock. Soon after that hour I made my appearance, and found three other gentlemen, officials from Krasnoyarsk, making up a party of half a dozen, including host and hostess. After being introduced to the other guests, I was requested to help myself from the side-table to a glass of vodka or sherry, with a morsel of bread and cheese, or a sardine. A card-table was soon after placed in the centre of the room, and the four gentlemen sat down to play a game resembling whist, whilst I chatted in French with Madame. Sometimes Madame took a chair at the card-table, then the *Ispravnik* and I would hold a laborious conversation in Russian with the help of a dictionary. This continued

until half-past three, when soup was brought in and laid upon a side-table. The Ispravnik and I alone sat at this table; the card-players did not stir from their post; a plate of soup was placed beside each; they quickly despatched it and resumed their game. Courses of roast beef, fowls, pudding, etc. followed, and between each course the card-playing went on as usual. Half an hour after dinner coffee was served, and after coffee cards were continued as before, so I made my adieu highly interested and amused. In the evening (Monday, the 20th of August) we left Yeneseisk in a post pavoska, with our heavy luggage in a telega. The luggage being almost all mine, I paid for three horses, and M. Sprenberg, my companion, the young telegraph officer, for one.

We went along very pleasantly, progressing without any accident. The country looked very different from what I had found it in winter. From the tops of some of the hills we could see a great distance, and many of the views were striking. The fine road, with the long line of telegraph posts, descended into the valley through a strip of partially cleared country like an English park, and then lost itself in the forest. In the middle distance we could catch glimpses of the winding Yenesei. On its banks was a large village, conspicuous by its two white churches, whilst far away rose the distant mountains, almost as blue as the sky. As we neared Krasnoyarsk the country became barer and bleaker, the villages larger and more numerous, and considerable patches of black land were under cultivation, growing oats, wheat, rye, and hemp. Our road extended in some places for miles through meadows where horses and cows were grazing in great numbers. Birds were plentiful for the season of the year. Starlings were in large flocks. In the villages

sparrows and the three common species of swallow abounded. Wagtails were also numerous, all apparently the masked wagtail. Birds of prey were frequently to be seen perched upon the telegraph posts ; of these the larger number were kestrels, but occasionally a large brown buzzard was to be seen. A grey shrike likewise affected the telegraph wires. Magpies, carrion-crows, and ravens also abounded. We reached Krasnoyarsk on Friday, the 24th of August, at ten o'clock at night, having been about fifty-two hours on the way. The journey cost me thirty-eight roubles.

Here we spent three days very agreeably at the family hotel of Madame Visokovoi. There is an excellent club in Krasnoyarsk, where English bottled beer and stout may be obtained at three roubles the bottle. The club is situated in a large garden, where sometimes two or three orange-legged hobbies may be seen together on the wing.

The engineer of the telegraph office was a German from Berlin, and he gave me some interesting information about the line, which is leased to a Danish company. It frequently happens when some of the Indian cables are out of order or overcrowded with messages, that from 500 to 1000 English telegrams pass through Krasnoyarsk in a week. The fact of my travelling companion being a telegraph official, and dressed in the government official uniform, gave us free access to all the telegraph offices, and it was great fun chatting freely from time to time with the friends we had left behind us a thousand miles or more. I found in Krasnoyarsk, in consequence of the quantity of baggage I was bringing home, that I should be short of money, so I wired to St. Petersburg for five hundred roubles, and forty-eight hours afterwards had the notes in my pocket.

I found in Professor Strebeloff a most interesting and highly educated man, and enjoyed his hospitality more than once. To find a scientific man who could read English and speak German was a treat. He gave me a small collection of Siberian spiders for an entomological friend.

The most interesting event which happened to me in this town was, however, the purchase of a small collection of bronze and copper celts and other instruments which had been dug out of the ancient graves between Krasnoyarsk and Minusinsk.

The most interesting of these bronzes are figured as tail-pieces in this volume. So far as I know, this little collection, which is now in the British Museum, is unique in this country. In Erman's "Travels in Siberia," published in 1848, in an English translation (vol. ii. page 139), a description will be found of a similar collection from the same district. In an ethnological periodical published at Toulouse, entitled *Matériaux pour l'Histoire Primitif et Naturelle de l'Homme* (1873, page 497), a very similar collection is described and figured (plate xvi.) by M. E. Desor, the bronzes having been forwarded to him for that purpose by M. Lapatine, a Russian engineer residing in Krasnoyarsk. As I passed through St. Petersburg on my return journey, M. Russow, the curator of the Anthropological Museum in that city, showed me, in their almost unique series of Siberian objects of ethnological interest, a collection very much like my own from the same valley, and I also discovered a case of bronzes in the Imperial collection in the Hermitage in St. Petersburg, evidently having the same origin. All authorities agree that these bronzes are the remains of a race antecedent to any of the present races of Siberia. M. Lapatine states that he obtained his bronzes from

nomad Tatars, who collected them in the steppes whilst feeding their flocks ; and Erman mentions that they "are found in graves which, as the present Tatar inhabitants of the circle maintain, belong to a race now extinct and totally different from theirs."

Doctor Peacock presented me with a complete suit of Tungusk summer clothes, a quiver full of arrows, and the pipe and belt which he had got from a Tungusk at the gold mines. In one of these districts Dr. Peacock was for some years a physician, and he told me that on his arrival, out of a population of five thousand men under his charge, he had found no less than eighteen hundred suffering from scurvy. He soon discovered that they were in the habit of bleeding themselves twice a year, in spring and in autumn. To this he put an end, and the following year the number of patients afflicted with scurvy was reduced to eight hundred, and the year following to two hundred.

Kibort, the Pole, who had promised to get me skins and eggs of birds, I found had done nothing, so after blowing him up sky high, I left 100 roubles with Dorset, the Krasnoyarsk "vet," who vowed to look after the delinquent ; and in consequence I have received many interesting parcels of birds from this district.

During our stay at Krasnoyarsk the weather was very unsettled ; one day we had to put up with showers of rain, and another with clouds of dust. The country in the neighbourhood looked charming—mountain, river, rock, and forest alternating with grassy plains and naked hills. Birds abounded. The white wagtail which we saw was the masked wagtail. Jackdaws were common, together with plenty of carrion crows, but there were no hoodies.

We left Krasnoyarsk on Saturday evening at eight o'clock, and reached Tomsk on Wednesday morning,

August 29th, at ten o'clock, travelling two only out of the four nights. The weather was fine, broken by but one thunder-shower; in the afternoon, however, we found it very hot, with the sun striking in our faces. The roads were generally good, but dusty, and it was only now and then that we came upon a short stretch of corduroy road, which is certainly one of the most diabolical inventions for breaking the backs of poor travellers that can be conceived. The scenery was very fine. We seemed to be constantly passing through an English nobleman's park; the autumnal tints of the trees were wonderful, the same that I have seen in the fall in the American forests. The range of colours was exactly that of the finest Newtown pippin, varying from the richest chrome-yellow to the deepest madder red. Some of the villages we passed were very large; occasionally we went through a Tatar village, where the crescent occupied the place of the cross on the church spire. We frequently came upon gipsies who had pitched their wigwams outside the gates. Now and then we met a Buriat, a Transbaikal Mongolian. Birds were very numerous. The carrion crow was common for perhaps the first two hundred versts; during the next one hundred and fifty versts it was still found, but the hooded crow and the hybrid between the two abounded; and for the last two hundred versts the hoodie only was found. The migration of hoodies appears to have passed across country to Yeneseisk, leaving Krasnoyarsk to the south-east. A Pole whom I met at one of the villages, a zealous jäger and therefore an observer of birds, told me that the hooded crow had been there as long as he had—that is, thirteen years. The green wagtail was common, but the white wagtail appeared to me to be the Indian or European white wagtail, and not the masked wagtail.

This journey cost me forty roubles. We might easily have made it in twelve hours less, but the steamer from Tomsk leaving only at 3 A.M. on the morning of the 30th, we preferred to take it easy. We were never absolutely stopped for horses, but we travelled under difficulties, for six horses had been reserved by telegraph at each station for General Sievers, who was on his way from Irkutsk, bent on catching the steamer for which we were bound. Early one morning we were told at one of the stations that there were no horses, not even for our crown padarozhnaya. We had, however, long ago reached that chronic state of stoical imperturbability into which all old travellers finally drift, and had ordered the samovar, and were discussing our second cup of tea, when a Cossack rode up full gallop, bearing orders from the Ispravnik of the town lying thirty miles behind, to the effect that the General might go to Hong Kong, but the Englishman must have the horses.

At Tomsk we found a capital hotel, the "European," kept by a one-armed Pole, and we spent a pleasant evening with one of the telegraph officers with whom my travelling companion was acquainted. Here we learned that Captain Wiggins had sold the wreck of the *Thames* for six thousand roubles. I afterwards learned that the Yeneseisk merchants who bought her were successful in saving her in the spring, but that they made the mistake of attempting to tow her up to Yeneseisk. After a series of disasters she was finally stranded on a sandbank, where it was impossible to save her when the ice broke up. She was accordingly dismantled, and what was left of her abandoned.



VILLAGE ON THE OB

CHAPTER XLV.

FROM TOMSK TO PERM.

From Tomsk to Tiumen—An Old Acquaintance—Cost of Steamboat Travelling—Cooking—Tobolsk—Contrast between Russian and Tatar Villages—Threading the Labyrinth of the Tura—The Black Kite—Cormorants—Asiatic White Crane—Notes of Sandpipers—Tiumen—Russian Hotel Accommodation—Bad Roads—Ekaterinburg—Recrossing the Ural—Iron-works—Kongur—New Railways—The Big Village.

WE left Tomsk on Thursday, the 30th of August. The water in the river was so low that the steamer was not able to come up to the town, so we were obliged to hire a droshky to drive us three miles to the station on Wednesday evening, when we got into a small tug steamer which weighed anchor at three o'clock in the morning. The *Kosagoffsky* was lying about forty-five versts down the river, and we were comfortably quartered on board of her in time for a late breakfast. She was a smart iron vessel, built in Tiumen, and would not have

disgraced an English dockyard. As we were going on board we met an old acquaintance, the secretary of old Von Gazenkampf of Turukansk, and we arranged to take a private second-class cabin for us three. The price was fifty roubles (about £2 each at the then rate of exchange), which, for a journey of 3200 versts, or upwards of 2000 miles, was very cheap. For our luggage we paid at the rate of one rouble per pood, or about eight shillings per cwt. Our meals were served in our own room, and we had an excellent dinner, consisting of five courses, for a rouble each.

We had an excellent cook on board, and had an opportunity of tasting the celebrated Siberian fishes to perfection. Fried sterlet is undoubtedly one of the finest dishes that can be put upon the table; it reminds one both of trout and eel, but possesses a delicacy superior to either. Nyelma, or white salmon, is, I think, an over-rated fish; to my taste, it is immeasurably inferior to pink salmon. What it might turn out in the hands of an English cook I do not know. Our cook on board was the best I had met in Russia. He could fry to perfection, but his roasts and his boils were not up to the mark; they evoked a suspicion that he had tried to kill two birds with one stone. His boiled meat had been stewed with an idea of making as much soup out of it as he dared, and his roast joints never underwent *destructive combustion* in any part; they were only a shade better than boiled meat browned with some piquante sauce.

On the 3rd of September we had left the Tom and the Ob and were steaming up the Irtysh, before long to enter the Tobol and afterwards the Tura. At noon on Wednesday we spent a couple of hours at Tobolsk, a fine old city with many interesting churches. Part of the town is built upon a hill, and part on the plain. It was formerly the capital of western Siberia, but since the

removal of the Government offices to Omsk, it has declined in importance. Its streets are wide, and paved with thick planks or battens laid longitudinally, which have rotted away in places, and a drive through the city is an experience to be endured rather than enjoyed. We found a second-class photographer in Tobolsk, from whom I bought some photographs of Ostiaks and Samoyedes.

The next day we steamed up the Tobol accompanied by a small steamer, which was to take us on to Tiumen, when the river became too shallow for our vessel to navigate. The country we passed continued to be very flat; there was seldom any view to be had from the deck but that of the interminable willows on either bank. Whenever we stopped for wood in the neighbourhood of a village, its inhabitants came out with milk, cream, eggs, raspberries, and cranberries to sell. These Russian hamlets looked, as usual, poor and dirty; many houses in them falling to ruins. On the other hand, the Tatar villages were clean and orderly.

We were nine days and nights steaming from Tomsk to Tiumen; but although the scenery was generally very monotonous—for the most part a low sandbank and the edge of an interminable willow-swamp was all that could be seen—we nevertheless enjoyed the change. It was something to be able to get a “square” meal. Occasionally we were able to go on shore at the villages, where we stopped to take in passengers or firewood. The stacks of the latter at some of the stations were enormous. Our engine-fires consumed forty sazhins a day, more than two hundred cubic yards. Twice before reaching Tiumen we had to change into smaller steamers, which alone were able so late in the season to thread the shallow labyrinth of the Tura. This river winds like a snake; we seemed to be perpetually describing a circle: the normal appearance was

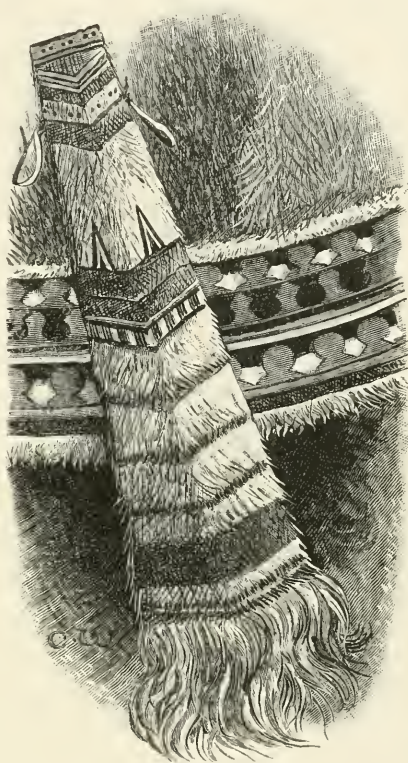
that of circumnavigating a clump of willows, surrounded by a narrow strip of green grass, which gradually lost itself in a sloping bank of yellow sand. The monotony of the journey was, however, wonderfully relieved by the abundance of bird life. To lounge on deck with binocular at hand ready to be brought to bear on any interesting bird or group of birds was pleasant pastime.

Birds of prey were very numerous. On the meadows around Tomsk the black kite was as common as it is in the Golden Horn at Constantinople. Hooded crows and magpies were constantly seen on the banks of the river ; and near the villages we noticed jackdaws, tree-sparrows and white wagtails. After we had entered the labyrinth of the Tura, large flocks of rooks appeared for the first time. Wading and swimming birds were of course the most abundant. Soon after leaving Tomsk, I noticed about forty cormorants on a sandbank. Whenever we passed a fishing party, gulls and terns were sure to abound : probably the common gull and the common tern. Ducks abounded everywhere. Cranes passed over occasionally in small flocks, and whilst steaming up the Tura I had a fine view of four or five Asiatic white cranes (*Grus leucogeranus*), as they flew leisurely over our vessel. During flight they appeared to be pure white all over, except the outside half of each wing, which looked jet-black.

Sandpipers were the commonest birds of all, and the most noisy. The redshank was the loudest of all, though perhaps the least numerous. His *tyü, tyü* is well known to every ornithologist. The note of the wood-sandpiper is very similar, but softer. This bird abounded. A less noisy and less common, but more conspicuous bird was the green sandpiper, whose *tyě, tyě* was frequently heard. The common sandpiper was also by no means

uncommon, and its meek *zss, zss* did not pass unnoticed. As we neared Tiumen a small flock of peewits appeared, feeding on the water's edge and flying before us from bank to bank of the river. In one of the villages I examined a peasant's stock of swan's skins; they were the wild swan and Bewick's swan in about equal numbers; so that there can be no doubt that both species are found in the valley of the Ob.

We reached Tiumen just as the sun was setting, and went to the best hotel. The town was one mass of mud, and the streets full of deep holes. No provision being made for lighting them, when darkness fell they became utterly deserted. No doubt it was the business of some official to see something done to improve matters. No doubt also he was paid so much a year by the inhabitants to permit nothing to be done, and so long as he could fill his own pockets he was perfectly satisfied, I doubt not, and the streets might go to the dogs. The *Wirthschaft* in the hotel was not much better; if a guest was provided with a lofty room having plenty of windows and a



DOLGAN QUIVER

(Border of Yurak *sovik* in background)

large door, it was evidently considered all that was needful for his comfort. A card-table, a sofa, and a couple of chairs was furniture abundant. If he had neglected to bring his bed and bedding he had better not undress, but lie down upon the sofa and sleep as best he could. Russian hotel-keepers apparently labour under the delusion that travellers are subject to hydrophobia, and must upon no account be allowed to see more than a pint of water at a time. When we asked to wash after a dusty journey, we were conducted to a brass machine containing when full about a quart of water. This mysterious looking receptacle was fixed against the wall. On lifting a valve at the bottom about a wine-glass full of water would ooze out and fall upon our hands, and this was called washing! To convert the dust into mud such an arrangement sufficed, but to do anything else than this was out of the question. On other occasions, when we asked that the necessaries for performing our ablutions might be brought to our rooms, a dirty flat-bottomed basin made of brass would be carried in to us, and placed upon the floor; over this we were expected to stand and wash, whilst the servant from time to time poured water upon our hands from an ancient looking vessel, also brass, and highly ornamented with a long narrow spout like a large coffee-pot. You are expected to have your own soap and your own towel. The only explanation I can suggest for these curious customs is that they may have first originated in the desire to avoid the communication of infectious diseases, brass being popularly supposed in the East to be incapable of conveying contagion. In Athens, Constantinople, or Smyrna, for example, the mouthpiece of your private nargilleh or chibouque is made of amber, but in a public restaurant, if you call for a nargilleh, the mouthpiece of the one handed to you will be of brass.

Should you ask why it is not of amber, the answer will probably be given you that amber is dangerous, being capable of conveying infection.

We left Tiumen at sunset on Saturday night, and made the first station in four hours, over a road which was a disgrace to the town. No ditches bordered it, and the rain that fell had to lie until the sun or the wind dried it up. We could not discover the slightest evidence that the road was ever mended. At the first station we slept four hours, simply to recover from the effects of the wretched journey over this highway, and then we travelled the whole of the following day without any improvement in the condition of our route.

The next morning, however, after a six hours' night rest, we came upon excellent roads, and reached Ekaterinburg at eight o'clock in the evening. The presence of rock on the road-side, a few stations before, indicated our near approach to the Ural. I saw no birds of special interest on the journey. The peasants we passed were busy stacking their corn. We got very comfortable quarters at the American Hotel, and spent an interesting day. Mr. Onesime Clerk was kind enough to do the honours of the place. He took us to see the Emperor's private manufactory of works of art, executed in the various valuable stones found in the Ural. We saw huge blocks of material and several unfinished vases, but as it was a holiday the men were not at work.

We visited the observatory, from which there is a panoramic view of the town, and were much astonished to learn that the average rainfall per annum for the last forty years has been eleven inches only (278 millimeters). The town looked very different now in the summer time from its winter-season appearance. It was by far the

handsomest Siberian city that I had seen, being in some parts very picturesque.

We left Ekaterinburg the following morning at ten o'clock, and crossed the European frontier, soon entering the range of hills and valleys called the Ural Mountains. The roads were not so bad as we had expected to find them, and we made the fourth station by nine o'clock, putting up there for the night. We had been warned at starting that many robberies had lately occurred on this route, and we were recommended not to travel after dark, and to wear our revolvers by day as conspicuously as possible. The story ran that some convicts, after murdering the soldiers who had escorted them to Siberia, had made their escape, and were now in the Ural forests, living by plundering the caravans that passed through. In many places the roads over which we travelled were mended with white quartz, and we met many telegas laden with granite, probably destined to be used for the same purpose. The scenery all around was very fine, alternate hill and forest, but we saw nothing that could possibly be called a mountain. The next morning we were up by four o'clock, and accomplished five stations during the day, over roads that did not deserve to be much grumbled at. We passed the Vassilyova Iron-works, and took with us a sample of the iron ore, which is so magnetic that a needle clings to it with considerable force.

Our way still lay through hills and valleys covered with forest, and from some of the ridges we had fine and extended views. The next day we travelled from 5 A.M. to 8 P.M. The last thirty versts before reaching Kongur were very heavy work, the roads almost reaching the point when it is impossible for roads to become worse; they were a thick mixture of gravel and mud, with deep

ruts into which our wheels sank nearly up to the axles. To add to our misery we were overtaken by frequent showers of rain. We seemed generally to be on high land, only occasionally descending into the valleys. Rooks were very abundant, and we constantly passed colonies of their now deserted nests in the birch-trees on the road-side. The hooded crows seemed to live very peaceably amongst them. We often noticed birds of the two species amicably feeding together, but there was not the slightest evidence of any interbreeding between them. The rook is probably only a summer visitor here as it is in Tiumen, and the hooded crows may possibly pair before the rooks arrive. Jackdaws were also equally abundant, some having the neck grey, others with a ring almost pure white. As soon as we arrived at Kongur an isvostchik drove us to the house of Mr. Hawkes. Unfortunately he was from home, attending the great fair at Nishni Novgorod, but his manager entertained us most hospitably, and we enjoyed some English porter, which to us was as great a treat as champagne would have been. Kongur was the most easterly town we visited whose streets were lighted at night: no attempt, however, being made at paving, we found them transformed into rivers of mud. The four remaining stations to Perm occupied us fourteen hours. The road was simply diabolical, and had it not been that we could frequently leave it and travel on the grass bordering it, we should have been much longer on the way. Attempts to improve this highway have been made to little or no purpose. The amount of traffic upon it is enormous. We no sooner passed one caravan than we came upon another; and frequently, as far as the eye could reach, there defiled before us one long line of telegas, laden with goods *en route* for Siberia. In the other direction the traffic was less.

We were told that the railway was to be opened between Perm and Ekaterinburg the following autumn. Another mode of transit and conveyance in this direction will be a boon to the overworked horses, and ought to prove a profitable speculation to all concerned in it. When the enormous traffic is removed from this road, the chances of mending it will improve.

The railway has since been opened, and my friend Mr. Wardroper informs me that the price of wheat has doubled in Tiumen in consequence of a concession having been granted by the Government to a company to form a line of rail from Ekaterinburg to that town. When this line is completed there will be steam communication in summer from St. Petersburg to Tomsk, a distance of 6630 versts, or 4200 miles.

It was an immense relief to think that we had paid off our last yemshik, and should finish our long journey by steam. The distances that are travelled by horses in Siberia are enormous, and yet there is probably no country in the world where so much travelling is accomplished by the merchants, who are obliged to visit the great fairs regularly if they wish to buy in the cheapest and sell in the dearest market. In the course of conversation with one of these merchants Siberia was half-jokingly described to me as a big village, the main street of which, extending from Nishni Novgorod to Kiakhta, was about five thousand miles long, where there were always half a million horses on the road, and where everybody knew everybody else from one end of the street to the other.



OSTIAK CHOOM ON THE OB

CHAPTER XLVI.

HOMeward BOUND.

Perm — De-Tatarisation of Russia — The Siberiak — Heavy Rain — Autumnal Tints — Kazan — Search for a Professor — The Museum — Tatars — Steamboat Accident — The Volga — Nishni Novgorod — Moscow — Its Museum — St. Petersburg.

It was quite dark when we reached Perm on Saturday, the 15th of September, and we at once drove to the steamer *Samolot*, or "self-flyer," delighted to bid a long adieu to tarantass, telega, and Tatar yemshik, and to find ourselves once more directly steaming towards Europe and civilisation.

Russia has made enormous progress since the abolition of serfdom; yet the moment you cross its frontier you still feel that you have left Europe and

European ideas behind, and are, to all intents and purposes, among Asiatics in Asia. The Mongols are at home there, but you are a foreigner. The late Emperor, no doubt, did much to de-Tatarise his vast realm, and, from what I can learn, with sure, if comparatively slow, results. I am told that the most European town in all the Russias is Irkutsk. Some day, doubtless, this city will be a second New York, the capital of an Asiatic United States, a free Siberia from the Ural to the Pacific. This change will probably not be brought about by revolution. The Russian is too law-loving a man to try and free himself by force from the mother country. He will trust to the accidents of diplomacy. Siberia will some day be free. Every Siberian imbibes the notion of freedom with his mother's milk. Though born in Russia, or the child of Russian parents, he repudiates his nationality, calls himself a Siberiak, and is proud of his country. He looks down upon the Russian as the Yankee scorns the Britisher.

We left Perm on the morning of the 16th of September; a strong sou'-wester blowing, which during the afternoon ended in a deluge of rain. A day later on the road we and all our goods would most likely have been drenched through. From the river we did not see much of the town; the banks were steep, and we only saw that part built in the valleys which came down to the water's edge. At a distance the lower valley seemed to be full of public buildings, and the upper one of factories.

We had heavy gales and showers all the next day. Only at intervals could we enjoy a walk on deck. The banks of the Kama are hilly and well wooded, and the trees were in all the brilliancy of their autumnal tints. I have only seen in America any hue approaching the chrome-yellows of the birches, or the fire-red of the

poplars. This was thoroughly Siberian, yet we were enduring all the miseries of the worst season of European climate. In the morning rain and wind, in the afternoon wind and rain. Another feature in the landscape showed that we had left Siberia: the much greater extent of land under cultivation, and the increased number of villages. What struck me most was the immense amount of traffic on the river; we were continually meeting steamers towing two, three, four, and in one instance ten large barges laden with goods *en route* for Siberia.

We ought to have reached Kazan at eleven o'clock the next morning, but a driving hurricane of wind and rain in our teeth delayed us until three in the afternoon. The town lay some four versts inland, and was connected with the river by a tramway. We bargained with an *isvostchik* to drive us direct to the University, a huge pile of buildings surrounding, in a rambling fashion, a large courtyard, possibly intended for a garden, where confusion reigned supreme. Six hundred students from all parts of Russia and Siberia are educated at this University, where, no doubt, the elements of disorder everywhere so rife in the Russian character are thoroughly inculcated. I had a letter of introduction from an eminent ornithologist in St. Petersburg to Professor Peltzam, whose acquaintance I was most anxious to make, as he had visited the Petchora the year before Harvie-Brown and I were there. After seeking in vain in various official buildings we at last found an old woman, who conducted us to the Professor's house in the University grounds. Madame Peltzam came to the door, and the following colloquy took place:—"Is the Professor at home?" I asked. "No." "Is it possible to send for him?" "No." "Can Madame inform me where we might find him?" "No idea." "Can

Madame tell us when the Professor will be at home ? ”
“ Possibly late at night, or early to-morrow morning ! ”
I explained that I had letters of introduction to the Professor, and intended to leave for England early the following morning, and was most anxious to see him. Madame was sorry she “ could give us no further information. ” Nothing more was to be said, yet what was to be done ? Fortunately I remembered that I had another letter to a Professor in Kazan, Professor Kovalefsky. The *isvostchik* drove us to his house. The Professor was at dinner, but most kindly came at once to see us. I explained my vain attempts to find Dr. Peltzam, and asked if he could arrange for me to see the ornithological museum. He at once offered to conduct me thither in half an hour, and promised that Dr. Peltzam should be there to meet me. When I called again, at the expiration of the prescribed time, the Professor was waiting to escort us to the museum, and informed me that Dr. Peltzam was already there. This was the second time that a Russian lady had denied to me all knowledge of the whereabouts of her husband, of whom I was in quest, and on both occasions the denial was given in a manner that convinced both myself and those who accompanied me that its object was to prevent us finding the gentleman in question. The only explanation I can suggest for this strange reception is that, as my companion travelled in the uniform of the Russian service, we were mistaken for members of the secret police, who have power of arresting any individual at a moment’s notice, without granting him any form of trial or explanation, and transporting him there and then to Siberia ; a monstrous exercise of tyranny which only a chicken-hearted nation, like the Russian, would endure for a day without a revolution.

In the ornithological museum I found very little to interest me. The birds were without localities, and consequently without scientific value. Dr. Peltzam told me that, since the retirement of Dr. Bogdanoff, no one had taken up ornithology as a speciality. He showed me what he believed to be hybrids between the capercailzie and black game, and a couple of grey hens which had partially assumed the male plumage. The latter were interesting from the fact that, upon dissection, the ovary in each case was found to have been injured by a shot, and the birds in consequence rendered barren. Although three years had elapsed since Dr. Peltzam's visit to the Petchora, he had not yet prepared the scientific results of it for the press. Whether this delay was the result of Russian dilatoriness or of German *Grundlichkeit* carried to a pedantic extreme, I cannot say.

In the ethnological department the prevailing disorder reached its climax; considering the locality also, the collection was meagre in the extreme. I saw, however, one or two things of great interest, among them a complete suit of summer clothing, from the east of Lake Baikal, which was said to be Tungusk. This dress was semi-transparent, and made of bladder or fishes' skin.* Another most interesting object was the dress of a Shaman, the front covered with many pounds' weight of iron, wrought into images of fishes and animals of all kinds. It was evidently Siberian. The curator told me that the Shaman was the doctor of the tribe, and that each image was a present from a patient whom he had cured. I was shown everything that could interest me, and I am much indebted to Professor Kovalefsky, Dr. Peltzam, and the other curators for their kindness and attention.

* These dresses are found as far east as Kamschatka, where they are used as waterproofs.—ED.

I can only regret that they are buried alive in such a God-forsaken place as the University of Kazan.

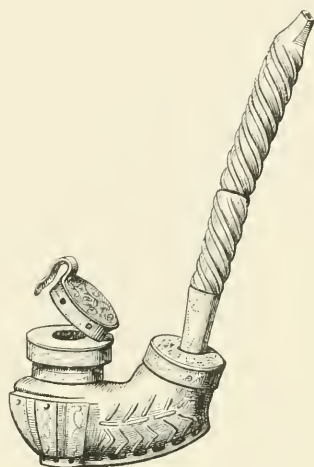
I had now seen much of the Tatars. By their appearance they seem to belong to a much higher race than the Dolgans or Tungusks. More or less copper-coloured, with high cheek-bones, small noses, sunken eyes, and large jaws, their features are yet much more regular than those of their supposed relations, and their beards more developed. This may be the result of their more civilised life in a more genial climate. Yet it seems to make them indebted to the Arabs for something more than their religion. Probably the change of faith was not made without some admixture of Arab blood, or, perhaps, like the Turks the Tatars have undergone a national change of feature through the importation of Aryan blood into their harems.

We ought to have left Kazan at eight o'clock the next morning, and we were at the station punctually at that hour, but we waited and waited in vain—no steamer came. At eleven a telegram arrived with the news that our vessel had been injured by collision with another. A spare steamer was now made ready for us, and the Kazan passengers departed, leaving the Kama passengers to their fate. I was told that three hundred steamers ply the Volga and the Kama, and considering the darkness and storminess of many of the nights, and the narrowness of the navigable channels in some parts of the river, an occasional collision is no matter for surprise. The scenery of the Volga was very similar to that of the Kama, but the river was wider, the country somewhat flatter, and the towns larger. Formerly the church was the only stone building to be seen, now there were stone dwellings in most of the villages we passed.

We reached Nishni Novgorod about five o'clock in

the afternoon of Thursday, the 20th of September, our progress having been delayed by the strong westerly gales that continued to prevail. The fair was over, but still a brisk atmosphere of business pervaded the town, the streets and bridges were crowded with traffic, and everything denoted activity and prosperity. In a couple of hours we had transferred our luggage to the railway station, delighted once more to see a locomotive, and to feel ourselves dragged over rails after having sat behind about fifteen hundred horses, to say nothing of dogs and reindeer.

We reached Moscow in good time on Friday morning, September 21st, and I lost no time in presenting my letters of introduction to M. Sabanaeff. From him I learnt that he had ceased to pursue his ornithological studies, and had given away his collection to one of the Moscow museums.



RUSSIAN PIPE

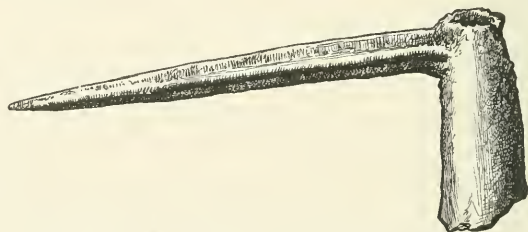
The next day I spent an hour at the museum of the University, looking over Sabanaeff's collection of birds' skins from the Ural. In the University of Kazan I thought disorder reigned supreme, but in that of Moscow I was obliged to admit the final triumph of chaos. There was a collection of more than a thousand skins of birds, specially interesting, being collected on the boundary of the Eastern and Western Palæarctic regions. These skins were all mixed up, the land-birds with water-birds, the large with the small, crammed into drawers and cupboards, with no covering over them, not even a sheet

of paper to keep out the dust. Delving for information in such a mine was almost a hopeless task; but I succeeded, owing to the indefatigable kindness of M. Sabanaeff, in gaining some interesting facts.

I left Moscow on Saturday at half-past eight in the evening, and arrived at St. Petersburg at half-past ten the next morning. I remained a few days in this interesting city, and reached home the afternoon of Wednesday, the 10th of October, having accomplished the following mileage:—

Sheffield to Nishni Novgorod by rail	2,560
Nishni Novgorod to Kureika by sledge	3,240
Kureika to Golchika by ship	1,000
Golchika to Yeneseisk by steamer	1,810
Yeneseisk to Tomsk by pavoska	590
Tomsk to Tiumen by steamer	2,134
Tiumen to Perm by pavoska	460
Perm to Nishni Novgorod by steamer	800
Nishni Novgorod to Sheffield by rail	2,560
	15,154

Shortly afterwards Captain Wiggins also returned, though he had to abandon part of his baggage on account of the badness of the roads across the Ural Mountains. Of the adventures of the crew, all I know is that they arrived safely in England at last. Captain Schwanenberg weighed anchor in the *Ibis* on the 13th of August, and by a fluke arrived without accident on the 11th of September at Vardö, whence he was towed to Stockholm and crossed the Baltic arriving at St. Petersburg on the 13th of December.



BRONZE FROM ANCIENT GRAVE NEAR KRASNOYARSK



TATAR GIRL.

CHAPTER XLVII.

RUSSIAN CORRUPTION.

St. Petersburg—The Turkish War—Corruption of Russian Officials—Commercial Morality—Russian Servants—Turkish Misrule—Christianity of the Turks—Childishness of the Russian Peasants—Russian Conservatism—Financial Condition of Russia.

WHEN we arrived in St. Petersburg we found, as might naturally be expected, that the one topic of conversation was the war. Everybody from the Emperor downwards was disappointed. No one imagined that there could be

any difficulty in the matter if the enemy were not assisted by European allies. The conquest of Turkey was expected to be a mere walk over the course, a march past, with a few victories to give *éclat* to the Russian army. The Emperor soon discovered his mistake. Like Louis Napoleon in the Franco-German war, he found that his generals had deceived him as to the state of the army. In every department of the Government corruption had reigned supreme so long that disaster was the inevitable result. It was commonly reported that official incapacity and dishonesty reached their climax in the War Office, and every post brought fresh narratives of blunders and defeat. The commercial world of St. Petersburg were chuckling over a cartoon in *Kladderadatsch*, in which the Russian Army was depicted with lions' heads, the officers with asses' heads, and the generals with no heads at all. Of course the number of the *Berlin Punch* containing this lampoon was forbidden entrance into Russia, but many copies were surreptitiously introduced. There can be little doubt that, had not the Turkish Army been equally mismanaged, Russia would have been ignominiously defeated by her plucky little foe. But, after all, the less said by Englishmen about Russian blunders the better. Our fiascos in the Crimea, and recently in Zululand and the Transvaal, have been quite as disgraceful; possibly, if the whole truth were known, much more so.

The corruption of Russian officials is beyond all conception. Some time ago an attempt was made by the Government to clear out the Augean stable of railway management. It was found on one of the lines that for years the head office had been debited with an annual sum for the repairs of a building which had never been built, both the original sum paid for the purpose and the subsequent annual grants for imaginary repairs having

been embezzled by the local officials. The administrative staff was cashiered in a body, but the result was unsatisfactory in the extreme. Formerly the railway was managed by corrupt and dishonest men who had at least the merit of knowing something of their business. After the change, the railway was managed by corrupt and dishonest men who knew nothing of their business.

There is, perhaps, scarcely anything in the whole range of Russian social politics more hopeless than this universal official corruption. Half the Nihilism in Russia may be traced to this source. The Russian official is very impartial in the selection of his victims. He plunders the Government, he plunders the people, and he plunders his fellow officials ; but this is not all, his worst feature is that he helps the rich to plunder the poor. If by any chance an honest official is placed in any position of trust and tries to act justly, the rich merchants of the district combine together, and move heaven and earth to have him displaced, so that their own petty schemes of plunder may be renewed.

The cause of this corruption is not difficult to trace. In a nation so recently emancipated from serfdom a high standard of honour cannot be expected. All oriental nations are corrupt, not because they are oriental, but because they are governed more or less despotically. Theft and falsehood are the natural resources of slaves. It is only the free man who can afford to be honest, and to tell the truth. It is unreasonable to expect a sense of honour in the bureaucracy of any country unless it is supported by public opinion. Russia is passing through a stage which all nations have had to pass through, or will have to pass through—an intermediate stage between serfdom and freedom. Serfdom has been abolished by the decree of the late Emperor, but the vices of serfdom

will only be abolished by a gradual development which it will take generations to complete. At the present time the Russian peasant has little or no sense of honour. A merchant does not lose caste by doing a dishonourable action. So far from feeling any sense of shame from having acted dishonourably, he feels a sense of complacency. It gives a Russian far more innate pleasure to cheat somebody out of a rouble than to earn a rouble honestly. He feels that he has done a clever thing by earning a rouble dishonestly, and despises the honest man as weak. Nevertheless there are in the Russian character many elements of future greatness, and it is impossible to live amongst the Russians without liking them. Those who know Russia best will respond most heartily to the sentiment : "Russia, with all thy faults I love thee still." It is impossible to look upon the dishonesty and incapacity of the Russian officials without feeling both anger and contempt ; but we must not confound the Russian nation with its governors, nor can we condemn the latter without remembering that many of their vices are fostered by, if not inseparable from, the miserable system of despotism under which Russia still groans. The Russian is a child, with a child's virtues and a child's faults, and naturally claims from any right-minded person the pity and affection which childhood demands. The faithfulness of a Russian servant is something wonderful. He never tires in your service. If he has worked for you all day, he will gladly work for you all night if required. Nothing is too difficult for him to attempt. He is your right-hand man in every case of need. He can mend your carriage or your harness, and repair your clothes or your boots. Give him a good axe, and there is no joiner's or carpenter's work which he cannot do ; nay, if need be, he can build you a new house almost single-

handed. He can shoot your game, kill and cut up an ox, or do any plain cooking you may require. He is the soul of punctuality ; and if you order him to wake you at four o'clock in the morning you may sleep soundly to the last moment in the full confidence that, at five minutes past that hour, it will be your own fault if you have not made considerable progress with your toilet. He is honest if you trust him ; but for all that, to earn a glass of vodka he will lie without shame, and commit a petty theft without remorse.

There must be a great future in store for a nation with so many virtues. The Russians surely will not always remain children. At present we may consider them to be in a state of arrested development. A generation or two of education would doubtless develop both the intellectual and moral possibilities of the Russian, as it has developed those of his Western cousins. Russia is at this moment only beginning to rise out of the darkness of the Middle Ages. The Russian can at least congratulate himself upon the fact that there are two worse governments than his own in Europe, the Turkish and the Greek. The former government is probably the worst in the world, and it is a scandal to Europe and a shame to England that it should have been propped up so long. The Turkish *government* is nothing but a band of robbers, plundering Moslem and Christian alike, a horde of banditti whose only desert is the gallows. The Turk himself, on the other hand, is in some respects the best Christian in Europe. He is, in fact, too Christian. No other nation, unless it be the Russian, would submit to such misgovernment without a revolution.

Like the Russians, the Turks are extraordinarily hospitable ; and, as in Russia, so in Turkey or Asia Minor you may travel in safety into the remotest corners

and in the wildest districts. I remember passing an orchard in Asia Minor laden with ripe cherries. Because I was a stranger, the Turk to whom it belonged asked me to enter and take my fill. As we steamed down the Yenesei, and passed a *lodka*, the poor fisherman flung us a brace of sterlet on board, because we were strangers. How different to the English boor! "Who's him, Bill?" "I don't know—a stranger." "Then heave half a brick at him."

In some respects the Turk is the superior of the Russian, for he never lies, and his word is as good as his bond. The Turk, too, can live where the Russian would starve. The Russian is kept in comparative poverty by the rapacity of his *Ispravnik* and the venality of the police; whilst the Turk thrives under far greater robbery and more shameless injustice. How is this? Because the Russian, like the Englishman, is a spend-thrift, and too fond of his glass; whilst the Turk, like the Frenchman, is a sober, saving man. On the other side, again, the Turk has a touch of the Spaniard or Italian about him. It is always wise not to quarrel with a Turk. A Turk makes a good friend, but a vindictive enemy. With a Russian you may quarrel to your heart's content. He has this noble trait in his character, that he never bears malice; and however violently you may have quarrelled the night before, everything is soon forgiven and forgotten, and he meets you in the morning with a smile on his face and a hearty shake of the hand, as if nothing had happened. If you escaped being murdered last night in the heat of passion, you may be sure that you are in no danger to-day, or in the future, on the score of that quarrel.

Something of the good nature, the childishness, the happy-go-lucky feeling of the Russian, which forms such a marked feature in the national character, is doubtless

attributable to the fact that in the country the necessities of life are extremely cheap, and in the towns the demand for labour frequently exceeds the supply. Although commercial affairs appeared to be in a chronic state of depression, and the peasant was said to be taxed to the last rouble note that he could possibly realise, we saw nothing approaching destitution. Whatever may be the case in the more densely-populated districts in South Russia, wherever we travelled there appeared to be a superabundance of land. Bread, meat, milk, and potatoes generally abounded at fabulously low prices, and the heavy taxation did not appear, after all, to be such a very terrible thing. Neither the peasant nor his children had any occasion to starve. They might possibly have to go on short rations of their favourite tea, or be obliged to drink it without sugar; or they might be compelled to let their wardrobes run to seed, and have to make up for the thinness of their old clothes by putting an extra log on the fire. On Sundays and on holidays the rouble which the government or its representative had annexed would be most missed. The poor peasant might be obliged to forego the luxury of getting drunk, but possibly his inability to purchase vodka is a blessing rather than a curse. The struggle for existence in the parts of Russia which we visited is very easy, and the rate of development of the Russian mind can only be proportionately slow. The uneducated Russian is a child, with a child's virtues and a child's faults. The uneducated Englishman is a brute, a savage, with nothing of the child about him. The Englishman has learnt many a bitter lesson in the school of adversity. He has had many a battle with the wolf at the door—terrible battles—of the anguish and desperation of which the Russian can form no conception whatever; battles.

which have dried up his milk of human kindness, and made him naturally as savage as the wolf with which he has metaphorically fought. There are plenty of wolves in Russian forests, but they seldom come to a poor man's door as they do in England. When they do come the man becomes a Nihilist.

During both my journeys in Russia, as well as on a subsequent visit to St. Petersburg, Moscow, and Warsaw, at the time of the assassination of the late Czar, I made many enquiries respecting Nihilism. I found no difficulty whatever in entering into conversation on the subject, but considerable differences of opinion as to its nature and extent prevailed. One set of opinions, which I found principally held by the foreign residents, represented Nihilism as being confined to a handful of half-crazy fanatics. I was told that the Russians were the most conservative nation in the world, that when there has been another revolution in France, and a revolution in Germany, and when England has become a republic, that then, and not till then, the Russians will enquire whether their turn has not come. There is some truth in this idea. There is a strong party, whose headquarters are in Moscow, who are very conservative, attributing all the troubles of Russia to the introduction of Western civilisation and Western ideas, and only desirous of going back to the days before Peter the Great.

The other class of opinions, which I found held by many influential and well-informed Russians, represent Nihilism as a much more important and wide-spread influence, which is said to be especially rife in the army, and is being rapidly disseminated in the country by the soldiers who have served their time and have been dismissed to their homes. The pessimist party naturally

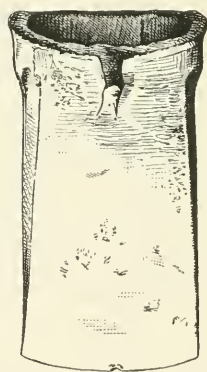
look upon the optimists as living in a fool's paradise, and think that a revolution which will sweep away every vestige of rank and wealth may happen any day. I cannot think that any such movement is possible in any part of Russia with which I am acquainted, but the condition of the people in South Russia may be quite different, and a blaze once lighted, the fire would probably sweep across the whole country and carry everything before it.

The financial condition of Russia is most unsatisfactory. The Crimean War, by increasing the indebtedness of the nation to foreign countries, brought down the value of the paper rouble from 38*d.* to about 32*d.* The Turkish War, from similar causes, still further reduced it to 25*d.* The philosophy of the exchange is easy of explanation. Russia has to export every year, in gold, an amount said to be fifteen millions sterling, to pay the interest of the national and private debts held out of the country. After exhausting the produce of her gold mines, roughly estimated at seven millions sterling, the balance must be the excess of exports over imports. If this be not enough, the price of bills on Russia (payable in paper roubles) must fall until they are low enough to tempt merchants to buy them for the sake of purchasing with them Russian produce, which they can sell in Europe at a profit, and thus make up the exports to the required amount.

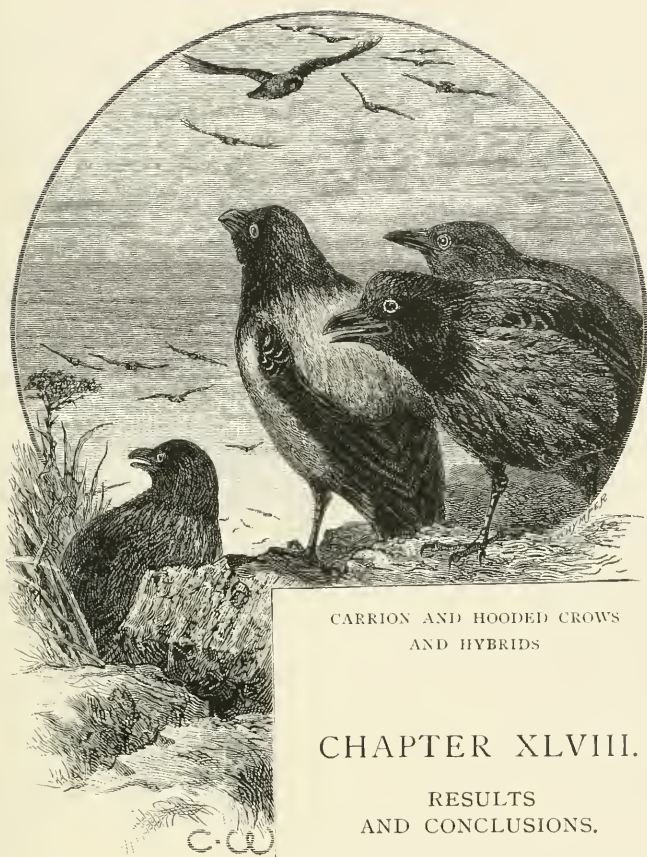
Under these unfavourable circumstances Russia is obliged to discourage imports as much as possible, and cannot adopt free trade. The finances of the country are in a diseased state, and cannot digest the wholesome food of free trade, but must resort to protection as a medicine. Some plausible physicians suggest a different remedy. They assert that Russia should honestly admit

her bankruptcy, and offer her creditors a fair composition, as other bankrupts do or ought to do. They say that if Russia was to pay her interest for the future in paper roubles, and adopt free trade, that her commerce would develop to such an extent that the country itself would benefit enormously, and that in the long run, by the rise in the value of the rouble, the bondholder would be better off than he will be when the inevitable breakdown of the present system comes.

There can be no doubt that the internal resources of Russia are immense, and that under a wise government which made their development possible Russia would soon become one of the wealthiest nations of Europe. Unfortunately the present Emperor has not the courage to attempt to govern his country justly.



BRONZE CELT FROM ANCIENT GRAVE NEAR KRASNOYARSK



CARRION AND HOODED CROWS
AND HYBRIDS

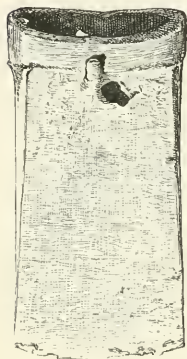
CHAPTER XLVIII.

RESULTS AND CONCLUSIONS.

Ornithological Results of the Trip
—Siberian Forms of Birds—Discoveries of Pallas—Comparison of
European and Siberian Birds—Interbreeding of Allied Species—Affinity
of European and Japanese Species—Sub-species—Conclusion.

THE ornithological results of my trip to the Yenesei were on the whole satisfactory. It was a great disappointment to me not to get to the coast, and still more so to miss the birds of the Kara Sea, and to arrive on the tundra too late for most of the eggs of which I was in search. The enforced delay in the pine forests produced, however, some very interesting results, and on the whole the excursion must be pronounced a success, although I

did not solve the problems which our expedition to the Petchora left open. It is very seldom that the first expedition to a strange land is successful. The pioneer can do little more than discover the localities where future researches may be successfully made. My great mistake was that I wintered too far north. Had I waited the arrival of the migratory birds at Yeneseisk instead of on the Arctic Circle, my ornithological bag would have been increased fourfold in value. On my



BRONZE CELT FROM
ANCIENT GRAVE
NEAR KRASNOVARSK

return journey my time was necessarily very limited, and I was obliged to husband my ammunition. It was also the most unfavourable time of the whole year for making ornithological observations. During the breeding season many birds forsake the neighbourhood of the villages and the cultivated land and scatter themselves through the forests. And whilst they are moulting in the autumn they seem to be fully aware that their powers of flight are limited, and that, consequently, they are an easy prey to their raptorial enemies, and therefore they seem afraid to trust themselves on the wing. For the most part they are silent at this season, and skulk amongst the underwood, and it is only by chance that one can obtain a shot at them. My plans were also considerably disarranged by the two shipwrecks, which did not form a part of my original programme.

The pioneer of Siberian ornithology was Pallas.* Pallas was a very keen observer, and finding that

* Pallas's "*Zoographia Russo-Asiatica*" was written in 1806, though, in consequence of the Napoleonic wars it was not printed till 1809, only published in 1826, and scarcely known until the re-issue in 1831.

many species of Siberian birds, though closely allied to West European species, were nevertheless distinguishable from them, he gave them names of his own. Modern writers on European ornithology have treated these names with scant courtesy. In some cases, where they have had an opportunity of comparing examples from Siberia with West-European skins, they have admitted the validity of his species; but in other cases, where they have also had access to East-European skins, the existence of intermediate forms has been alleged as a reason for denying the validity of the species, and the Siberian forms have been passed by with a contemptuous sneer, as beneath the notice of science. In the majority of cases, however, the writers have never seen a Siberian skin, and Pallas's names are consigned to the limbo of synonyms without note or comment. With these writers a species is either a species or it is nothing. They attempt to draw a hard and fast line where nature has drawn none. They profess to believe in the theory of the development of species, but they never dream of looking at birds from an evolutionary point of view. In their hearts they still cling to the old-fashioned notion of special creations. Their dogmatic criticism of Pallas's species, "We consider this a good species," or "We cannot admit the validity of this species," reads like a satire upon their own ignorance.



BRONZE CELT FROM
ANCIENT GRAVE NEAR
KRASNOYARSK

The fact is that most Siberian birds which are common to Europe do present marked differences in colour, not only the resident birds, but also the

migrants. If we consider the European forms as the typical ones, then the Siberian birds are Arctic forms. It may be interesting to enumerate some of these.

The Siberian form of the three-toed woodpecker, which Bonaparte (adopting a manuscript name given it by Brandt) called *Picus crissoleucus*, has the under parts almost snowy-white, whereas the European form has the feathers of most of the under parts conspicuously striated with black. Some of the Siberian examples, probably young birds, show some of these striations.

The Siberian form of the lesser spotted woodpecker, to which Pallas gave the name of *Picus pipra*, has the whole of the under parts unspotted silky-white, with the exception of the under tail-coverts, which are very slightly streaked with black. The transverse bars on the back and rump are also nearly obsolete. It is larger than the South European form, the wing measuring 3.75 inches, and the tail 2.5. I have shot it at Archangel and in the valley of the Petchora, and in addition to skins from the valley of the Yenesei, I have examples from Lake Baikal, the Amur, and the islands of Sakhalin and Yezo. Specimens from Norway and Sweden are, however, somewhat intermediate, being as large as the Siberian form, but in the colour and markings of the back and under parts they are only very slightly paler than the South European form.

The Siberian forms of the Lapp tit, to which Cabanis gave the name of *Parus obtectus*, are much less rusty on the flanks than Norwegian examples. It is, however, easy to find a complete series from the Scandinavian bird, through Archangel and Petchora skins, to the extreme Siberian form.

The Siberian form of the marsh tit, to which Bonaparte gave the name of *Parus camtchatkensis*, is an

extreme term of a somewhat complicated series. English skins are the brownest, and have the black on the head extending only to the nape, and are scarcely distinguishable from examples of *Parus palustris* from the South of France, Italy, and Asia Minor. This form turns up again in China. Examples of *P. borealis* from Norway differ in having the back grey instead of brown. Examples from Archangel are greyer still, and have the black on the head extending beyond the nape. Both these characteristics are more pronounced in skins from the Petchora, the Ob, and the Lower Yenesei, and still more so in those from the Upper Yenesei—the true *P. camtchatkensis*; whilst in Japan a fourth form, to which I have given the name of *P. japonicus*, is found, which combines a greyish-brown back with the great development of the black on the head.

The Siberian form of the nuthatch, to which Lichtenstein gave the name of *Sitta uralensis*, is another case in point. Examples from the Yenesei, and also from the north island of Japan, have the under parts almost pure white.

Other examples of slight variations between our birds and those of Siberia might be given, in some cases where intermediate forms are known to exist, and in others where they have not yet been discovered, or may possibly not exist. The subject of the interbreeding of nearly-allied birds in certain localities where their geographical ranges meet or overlap, and the almost identical subject of the existence of intermediate forms in the intervening district between the respective geographical ranges of nearly-allied birds, is one which has not yet received the attention which it deserves from ornithologists. The older brethren of the fraternity have always pooh-pooh'd any attempt to explain some of these

complicated facts of nature by the theory of interbreeding, and have looked upon the suggestion that hybridisation was anything but an abnormal circumstance as one of the lamest modes of getting out of an ornithological difficulty. The fact is that these pre-Darwinian scientific men have adopted the theory of evolution only theoretically, and have not yet been able to overcome the effects of early education sufficiently to adopt it practically, and to look upon the facts of nature from the new standpoint.

The explanation of these Siberian forms of our well-known species of birds, whether they be or be not connected together by intermediate links, must be sought for in Japan and North China. When we get back into a temperate climate again, we find the familiar forms of temperate Europe reappearing, or nearly so. For example, the greater spotted woodpecker of South Europe is almost identical with that of Japan, whilst that of Siberia is white instead of pale-grey on the under parts. The short-eared owl of South Europe is also identical with that of North China, whilst the adult male of the Siberian form is what ornithologists unmeaningly call the "pale phase" of the species. The same remarks apply to the European, Siberian, and Japanese forms of the Ural owl. The nuthatch of China only differs from ours in being a trifle smaller. The more one examines this subject the more evidence one finds of the existence of forms, the extremes of which are very distinct, but which must be considered as only sub-specifically separated, inasmuch as a series of intermediate forms from intervening localities connects them. Many birds, in addition to the typical or temperate form, have an Arctic form, in which the white is highly developed; a desert form, in which the yellowish-browns are predominant; and a tropical form—in localities where the rainfall is

excessive—which appears to be highly favourable to the production of reddish-browns. It is very difficult to determine the precise cause of these variations. At first I was inclined to ascribe it to the direct chemical influence of climate upon the colouring matter of the feathers, but a larger acquaintance with these Siberian forms—which are much more numerous than I supposed, the fact being that it is the rule and not the exception for Siberian forms to differ from European ones—has convinced me that the explanation must be sought in the theory of protective colouring gradually assumed by the survival of the fittest.

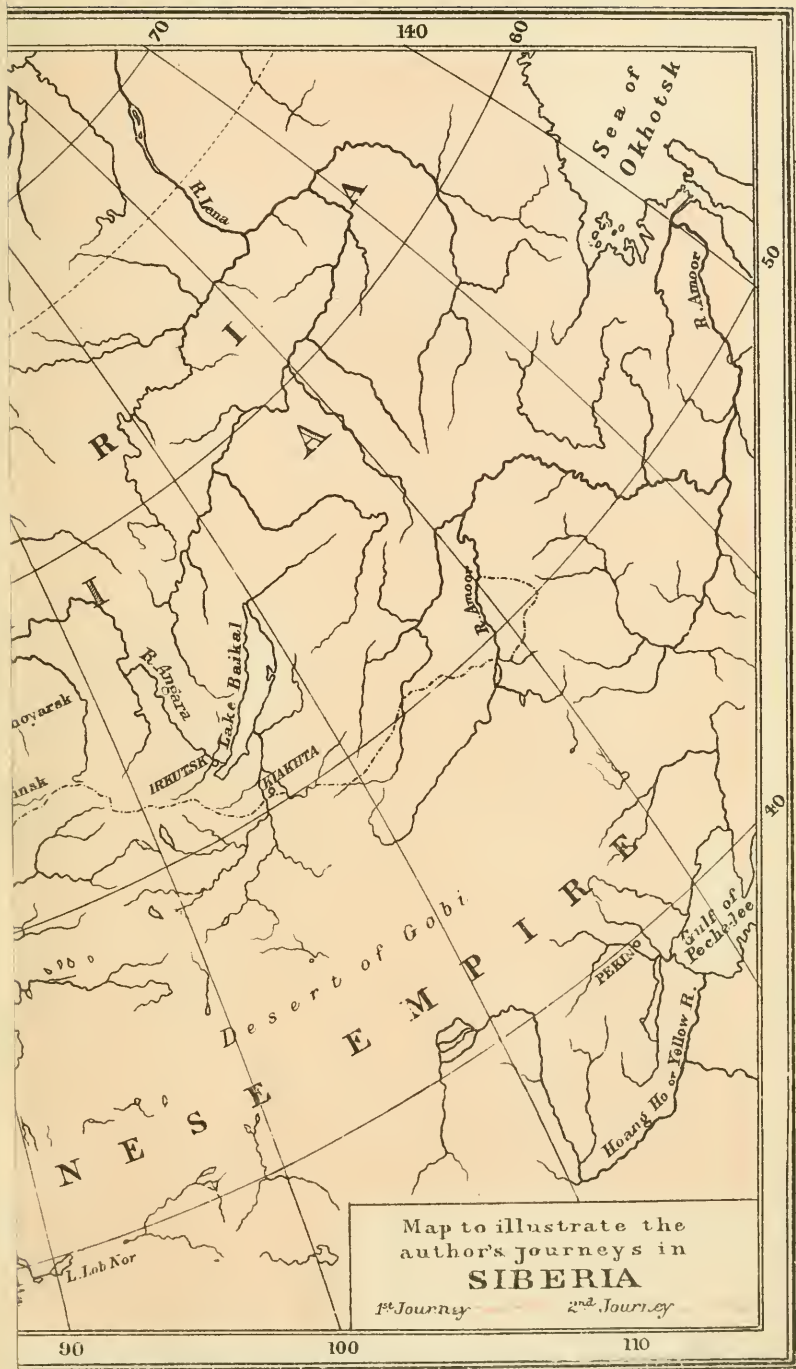
Here again the confirmed habit of the older ornithologists of either treating these little differences as specific, or of ignoring them altogether, is much to be deplored. I venture to suggest, as a punishment for their delinquencies, that they should be exiled to Siberia for a summer to learn to harmonise their system of nomenclature with the facts of nature. Dr. Dryasdust and Professor Redtape have committed themselves in the pre-Darwinian dark ages of ornithology to a binomial system of nomenclature, which does not easily lend itself to the discrimination of specific forms; and although the American ornithologists have emancipated themselves from the fetters of an antiquated system, English ornithological nomenclators still groan under the bonds of this effete binomial system, and vex the souls of field-naturalists with capricious changes of names in their futile efforts to make their nomenclature subservient to a Utopian set of rules called the Stricklandian code—laws which are far more honoured in the breach than in the observance, for they have done great harm to the study of birds. It is devoutly to be wished that the rising generation of ornithologists may have the courage to

throw the binomial system to the dogs, and trample the Stricklandian code under foot, and once for all study nature and make their nomenclature harmonise with the facts of nature.

One of the great charms of the study of ornithology is the amount of work which still remains to be done. The pleasure which comes from labour of any kind is pretty much in proportion to its results, and there are very few, if any countries in which ornithological field-work is not amply repaid by interesting discoveries. I trust that when the reader lays down my book he will agree with me that there are few countries in the world more prolific of objects of interest than Siberia.



BRONZE IKON





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